Potential Flow Forces and Moments from Selected Ship Flow Codes in a Set of Numerical Experiments

Appendix J — Time History Plots for 2-DOF Wave Contouring Motion of Model 5514

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Contents

Page

Figures J–2
Tables J–9
Introduction J–28

Figures

Page

J–1. Time history of η for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–29

J–2. Time history of η for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–31

J–3. Time history of η for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–33

J–4. Time history of η for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–35

J–5. Time history of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–37

J–6. Time history of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–39

J–7. Time history of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–41

J–8. Time history of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–43

J–9. Time history of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–45

J–10. Time history of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–47

J–11. Time history of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–49

J–12. Time history of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–51

J–13. Time history of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–53

J–14. Time history of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–55

J–15. Time history of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–57

J–16. Time history of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–59

J–17. Time history of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–61

J–18. Time history of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–63

J–19. Time history of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–65

J–20. Time history of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–67

J–21. Time history of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–69

J–22. Time history of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–71

J–23. Time history of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–73

J–24. Time history of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–75

J–25. Time history of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–77

J–26. Time history of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–79

J–27. Time history of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–81

J–28. Time history of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–83

J–29. Time history of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–85

J–30. Time history of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–87

J–31. Time history of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–89

J–32. Time history of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–91

J–33. Time history of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–93

J–34. Time history of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–95

J–35. Time history of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–97

J–36. Time history of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–99

J–37. Time history of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–101

J–38. Time history of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–103

J–39. Time history of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–105

J–40. Time history of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–107

J–41. Time history of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–109

J–42. Time history of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–111

J–43. Time history of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–113

J–44. Time history of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–115

J–45. Time history of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–117

J–46. Time history of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–119

J–47. Time history of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–121

J–48. Time history of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–123

J–49. Time history of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–125

J–50. Time history of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–127

J–51. Time history of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–129

J–52. Time history of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–131

J–53. Time history of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–133

J–54. Time history of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–135
J–55. Time history of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–137
J–56. Time history of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–139
J–57. Time history of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–141
J–58. Time history of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–143
J–59. Time history of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–145
J–60. Time history of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–147
J–61. Time history of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–149
J–62. Time history of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–151
J–63. Time history of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–153
J–64. Time history of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–155
J–65. Time history of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–157
J–66. Time history of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–159
J–67. Time history of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–161

J–68. Time history of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–163

J–69. Time history of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–165

J–70. Time history of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–167

J–71. Time history of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–169

J–72. Time history of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–171

J–73. Time history of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–173

J–74. Time history of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–175

J–75. Time history of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–177

J–76. Time history of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–179

J–77. Time history of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–181

J–78. Time history of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–183

J–79. Time history of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–185

J–80. Time history of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–187

J–81. Time history of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–189

J–82. Time history of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–191

J–83. Time history of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–193

J–84. Time history of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–195

J–85. Time history of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–197

J–86. Time history of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–199

J–87. Time history of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–201

J–88. Time history of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–203

J–89. Time history of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–205

J–90. Time history of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–207

J–91. Time history of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–209

J–92. Time history of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–211

J–93. Time history of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–213

J–94. Time history of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–215

J–95. Time history of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–217

J–96. Time history of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–219
J–97. Time history of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–221
J–98. Time history of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–223
J–99. Time history of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–225
J–100. Time history of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–227
J–101. Time history of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–230
J–102. Time history of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–233
J–103. Time history of θ for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–235
J–104. Time history of θ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–237
J–105. Time history of θ for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–239
J–106. Time history of θ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–241

Tables

Page

J–1. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of η for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–30

J–2. Minimum and maximum of of η for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–30

J–3. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of η for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–32

J–4. Minimum and maximum of of η for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–32

J–5. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of η for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–34

J–6. Minimum and maximum of of η for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–34

J–7. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of η for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–36

J–8. Minimum and maximum of of η for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–36

J–9. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–38

J–10. Minimum and maximum of of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–38

J–11. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–40

J–12. Minimum and maximum of of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–40

J–13. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–42

J–14. Minimum and maximum of of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–42

J–15. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–44

J–16. Minimum and maximum of of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–44

J–17. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–46

J–18. Minimum and maximum of of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–46

J–19. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–48

J–20. Minimum and maximum of of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–48

J–21. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–50

J–22. Minimum and maximum of of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–50

J–23. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–52

J–24. Minimum and maximum of of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–52

J–25. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–54

J–26. Minimum and maximum of of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–54

J–27. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–56

J–28. Minimum and maximum of of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–56

J–29. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–58

J–30. Minimum and maximum of of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–58

J–31. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–60

J–32. Minimum and maximum of of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–60

J–33. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–62

J–34. Minimum and maximum of of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. . J–62

J–35. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–64

J–36. Minimum and maximum of of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–64

J–37. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–66

J–38. Minimum and maximum of of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. . J–66

J–39. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–68

J–40. Minimum and maximum of of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–68

J–41. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–70

J–42. Minimum and maximum of of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. . J–70

J–43. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–72

J–44. Minimum and maximum of of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–72

J–45. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–74

J–46. Minimum and maximum of of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. . J–74

J–47. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–76

J–48. Minimum and maximum of of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–76

J–49. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–78

J–50. Minimum and maximum of of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. . J–78

J–51. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–80

J–52. Minimum and maximum of of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–80

J–53. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–82

J–54. Minimum and maximum of of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. . J–82

J–55. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–84

J–56. Minimum and maximum of of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–84

J–57. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–86

J–58. Minimum and maximum of of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–86

J–59. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–88

J–60. Minimum and maximum of of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–88

J–61. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–90

J–62. Minimum and maximum of of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–90

J–63. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–92

J–64. Minimum and maximum of of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–92

J–65. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–94

J–66. Minimum and maximum of of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–94

J–67. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–96

J–68. Minimum and maximum of of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–96

J–69. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–98

J–70. Minimum and maximum of of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–98

J–71. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–100

J–72. Minimum and maximum of of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–100

J–73. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–102

J–74. Minimum and maximum of of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–102

J–75. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–104

J–76. Minimum and maximum of of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–104

J–77. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–106

J–78. Minimum and maximum of of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–106

J–79. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–108

J–80. Minimum and maximum of of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–108

J–81. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–110

J–82. Minimum and maximum of of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–110

J–83. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–112

J–84. Minimum and maximum of of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–112

J–85. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–114

J–86. Minimum and maximum of of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–114

J–87. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–116

J–88. Minimum and maximum of of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–116

J–89. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–118

J–90. Minimum and maximum of of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–118

J–91. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–120

J–92. Minimum and maximum of of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–120

J–93. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–122

J–94. Minimum and maximum of of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–122

J–95. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–124

J–96. Minimum and maximum of of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–124

J–97. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–126

J–98. Minimum and maximum of of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–126

J–99. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–128

J–100. Minimum and maximum of of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–128

J–101. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–130

J–102. Minimum and maximum of of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–130

J–103. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–132

J–104. Minimum and maximum of of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–132

J–105. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–134

J–106. Minimum and maximum of of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–134

J–107. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–136

J–108. Minimum and maximum of of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–136

J–109. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–138

J–110. Minimum and maximum of of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–138

J–111. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–140

J–112. Minimum and maximum of of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–140

J–113. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–142

J–114. Minimum and maximum of of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–142

J–115. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–144

J–116. Minimum and maximum of of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–144

J–117. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–146

J–118. Minimum and maximum of of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–146

J–119. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–148

J–120. Minimum and maximum of of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–148

J–121. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–150

J–122. Minimum and maximum of of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–150

J–123. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–152

J–124. Minimum and maximum of of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–152

J–125. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–154

J–126. Minimum and maximum of of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–154

J–127. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–156

J–128. Minimum and maximum of of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–156

J–129. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–158

J–130. Minimum and maximum of of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–158

J–131. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–160

J–132. Minimum and maximum of of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–160

J–133. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–162

J–134. Minimum and maximum of of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–162

J–135. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–164

J–136. Minimum and maximum of of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–164

J–137. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–166

J–138. Minimum and maximum of of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–166

J–139. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–168

J–140. Minimum and maximum of of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–168

J–141. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–170

J–142. Minimum and maximum of of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–170

J–143. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–172

J–144. Minimum and maximum of of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–172

J–145. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–174

J–146. Minimum and maximum of of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–174

J–147. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–176

J–148. Minimum and maximum of of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–176

J–149. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–178

J–150. Minimum and maximum of of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–178

J–151. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–180

J–152. Minimum and maximum of of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–180

J–153. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–182

J–154. Minimum and maximum of of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–182

J–155. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–184

J–156. Minimum and maximum of of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–184

J–157. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–186

J–158. Minimum and maximum of of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–186

J–159. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–188

J–160. Minimum and maximum of of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–188

J–161. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–190

J–162. Minimum and maximum of of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–190

J–163. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–192

J–164. Minimum and maximum of of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–192

J–165. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–194

J–166. Minimum and maximum of of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–194

J–167. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–196

J–168. Minimum and maximum of of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–196

J–169. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–198

J–170. Minimum and maximum of of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–198

J–171. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–200

J–172. Minimum and maximum of of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–200

J–173. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–202

J–174. Minimum and maximum of of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–202

J–175. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–204

J–176. Minimum and maximum of of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–204

J–177. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–206

J–178. Minimum and maximum of of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. . J–206

J–179. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–208

J–180. Minimum and maximum of of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–208

J–181. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–210

J–182. Minimum and maximum of of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. . J–210

J–183. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–212

J–184. Minimum and maximum of of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–212

J–185. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–214

J–186. Minimum and maximum of of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. . J–214

J–187. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–216

J–188. Minimum and maximum of of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–216

J–189. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–218

J–190. Minimum and maximum of of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. . J–218

J–191. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–220

J–192. Minimum and maximum of of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–220

J–193. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–222

J–194. Minimum and maximum of of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. . J–222

J–195. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–224

J–196. Minimum and maximum of of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–224

J–197. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–226

J–198. Minimum and maximum of of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. . J–226

J–199. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–228

J–200. Minimum and maximum of of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–228

J–201. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–231

J–202. Minimum and maximum of of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–231

J–203. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–234

J–204. Minimum and maximum of of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–234

J–205. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of θ for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–236

J–206. Minimum and maximum of of θ for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m. J–236

J–207. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of θ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–238

J–208. Minimum and maximum of of θ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–238

J–209. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of θ for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–240

J–210. Minimum and maximum of of θ for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m. J–240

J–211. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of θ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–242

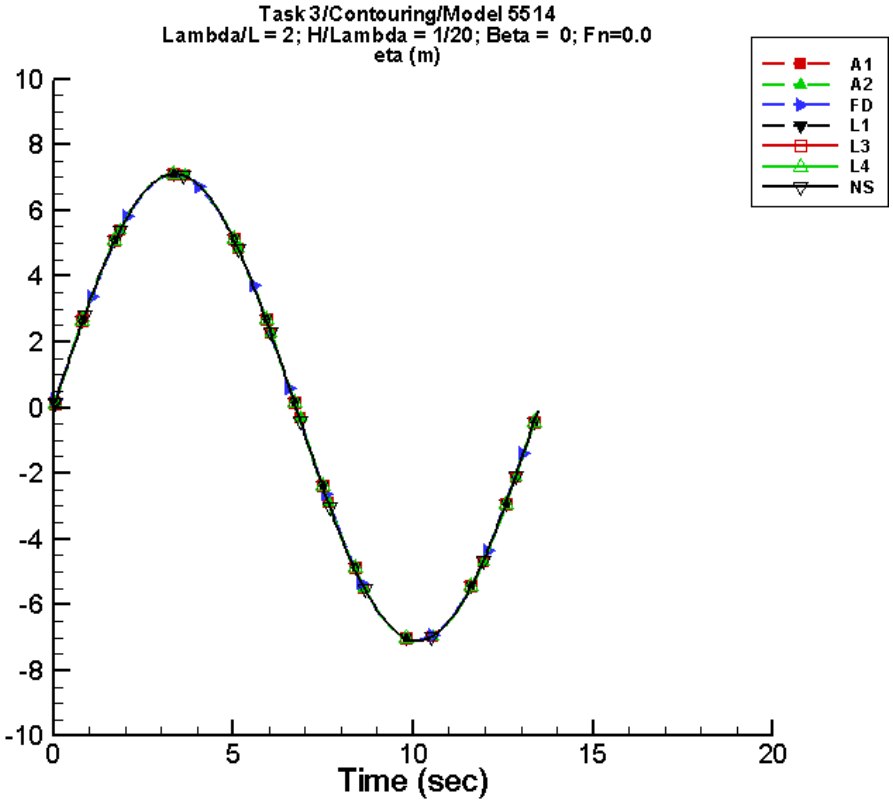
J–212. Minimum and maximum of of θ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m. J–242

Introduction

This appendix contains all the plots and tables for the simulations of task 3 involving 2-DOF nominal wave contouring of Model 5514 scaled to the length 142 m. It presents results for wave contouring in both beam and following seas. In either case the vertical position of the center of gravity is always at the water surface. For condition 1, where the ship undergoes prescribed heave and pitch motions in regular following seas, the wavelength and wave steepness are given by the equations $\lambda/L = 2$ and $H/\lambda = 1/20$. The longitudinal slope of the hull matches the slope of the waves at CG. For condition 2, where the ship undergoes prescribed heave and roll motions in regular beam seas, the wavelength and wave steepness are given by the equations $\lambda/L = 1$ and $H/\lambda = 1/10$. Here the transverse slope of the hull matches the slope of the waves at CG. Results for Froude numbers 0.0 and 0.3 are included.

Each of Figures J–1 through J–102 contains time-history plots of the results from all codes for each variable during one period of motion. If the code runner did not supply the data, the data vanish identically, or the data are insufficient for a single period, there is no curve for that code. As necessary, the time that appears on the horizontal axis has been shifted so that the heave displacement (equal to the wave height at CG) is of the form $\eta = \eta_a \sin \omega t$ for some amplitude η_a and some amplitude ω. Further, the time t has been replaced by $t \mod T_e$ where T_e is the period of the motion. For beam seas, the data from `AEGIR` were modified before plotting so that the results correspond to waves coming from the starboard side of the hull.

Tables J–1 through J–204 contain information related to the results found in the figures. Two tables follow each figure. The first table gives estimates of the mean value and the amplitudes and phases of the first and second harmonics obtained by Fourier analysis. The second table gives the minimum and maximum of the variable plotted in the figure. The minimum and maximum of both the filtered and unfiltered variable are provided although the plot itself was obtained from unfiltered data.



Data identically zero, insufficient, or not available from NFA.

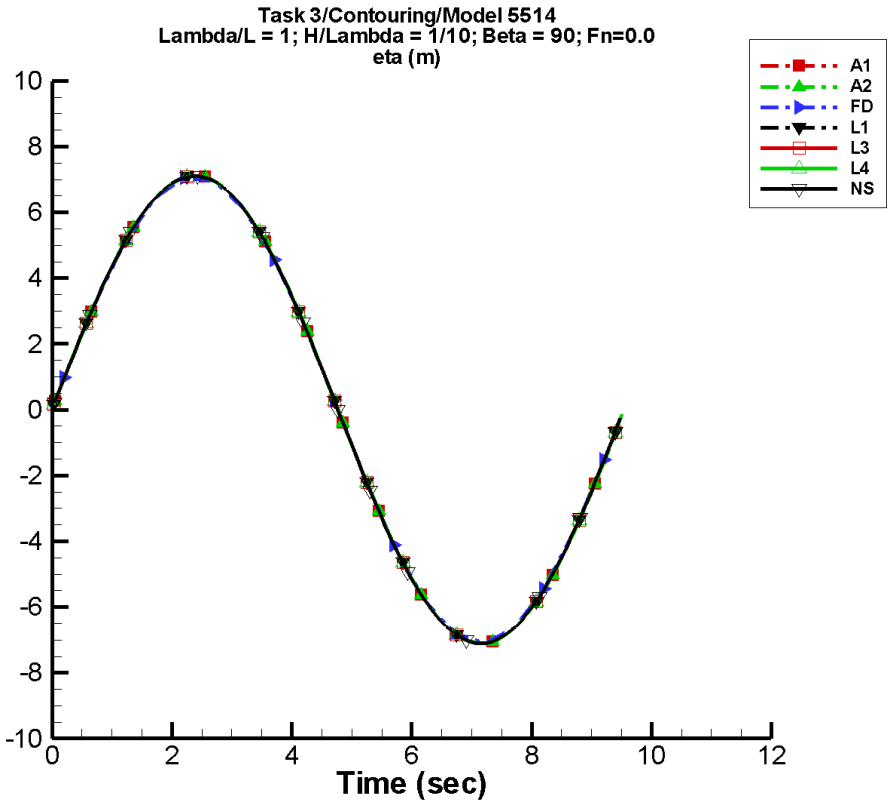
Figure J–1. Time history of η for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–1. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of η for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (m)	a_1 (m)	Φ_1 (deg)	a_2 (m)	Φ_2 (deg)
A1	-4.74E-03	7.12	-4	7.02E-03	-26
A2	-4.74E-03	7.12	-4	7.02E-03	-26
FD	-1.12E-03	7.10	-5	2.09E-03	-27
L1	1.43E-03	7.10	-6	3.35E-03	66
L3	1.43E-03	7.10	-6	3.35E-03	66
L4	1.43E-03	7.10	-6	3.35E-03	66
NF	—	—	—	—	—
NS	-1.43E-03	7.10	0	2.11E-03	-18

Table J–2. Minimum and maximum of of η for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (m)	Maximum (m)	Minimum (m)	Maximum (m)
A1	-7.12	7.12	-7.08	7.13
A2	-7.12	7.12	-7.08	7.13
FD	-7.10	7.07	-6.13	6.05
L1	-7.10	7.10	-7.09	7.09
L3	-7.10	7.10	-7.09	7.09
L4	-7.10	7.10	-7.09	7.09
NF	—	—	—	—
NS	-7.10	7.10	-7.08	7.12



Data identically zero, insufficient, or not available from NFA.

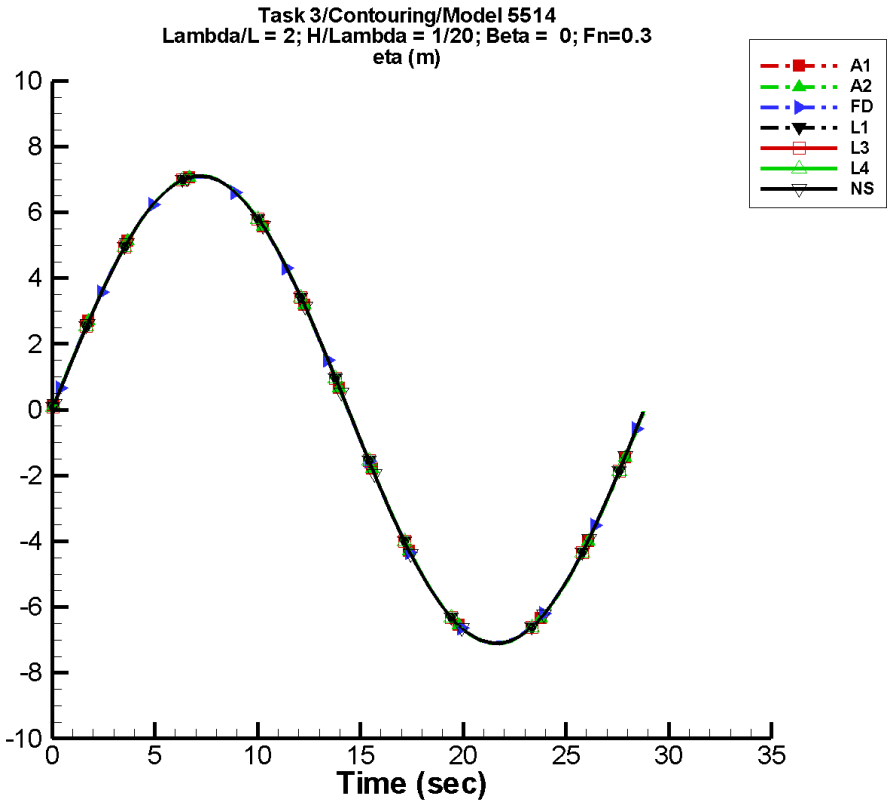
Figure J–2. Time history of η for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–3. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of η for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (m)	a_1 (m)	Φ_1 (deg)	a_2 (m)	Φ_2 (deg)
A1	-4.53E-03	7.12	-4	7.01E-03	-28
A2	-4.53E-03	7.12	-4	7.01E-03	-28
FD	3.19E-05	7.10	-14	3.12E-04	74
L1	-1.34E-03	7.10	-8	2.02E-03	-66
L3	-1.34E-03	7.10	-8	2.02E-03	-66
L4	-1.34E-03	7.10	-8	2.02E-03	-66
NF	—	—	—	—	—
NS	-1.53E-03	7.10	0	2.26E-03	-18

Table J–4. Minimum and maximum of of η for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (m)	Maximum (m)	Minimum (m)	Maximum (m)
A1	-7.12	7.12	-7.04	7.04
A2	-7.12	7.12	-7.04	7.04
FD	-7.10	7.05	-5.17	5.24
L1	-7.10	7.10	-7.07	7.07
L3	-7.10	7.10	-7.07	7.07
L4	-7.10	7.10	-7.07	7.07
NF	—	—	—	—
NS	-7.10	7.10	-7.08	7.11



Data identically zero, insufficient, or not available from NFA.

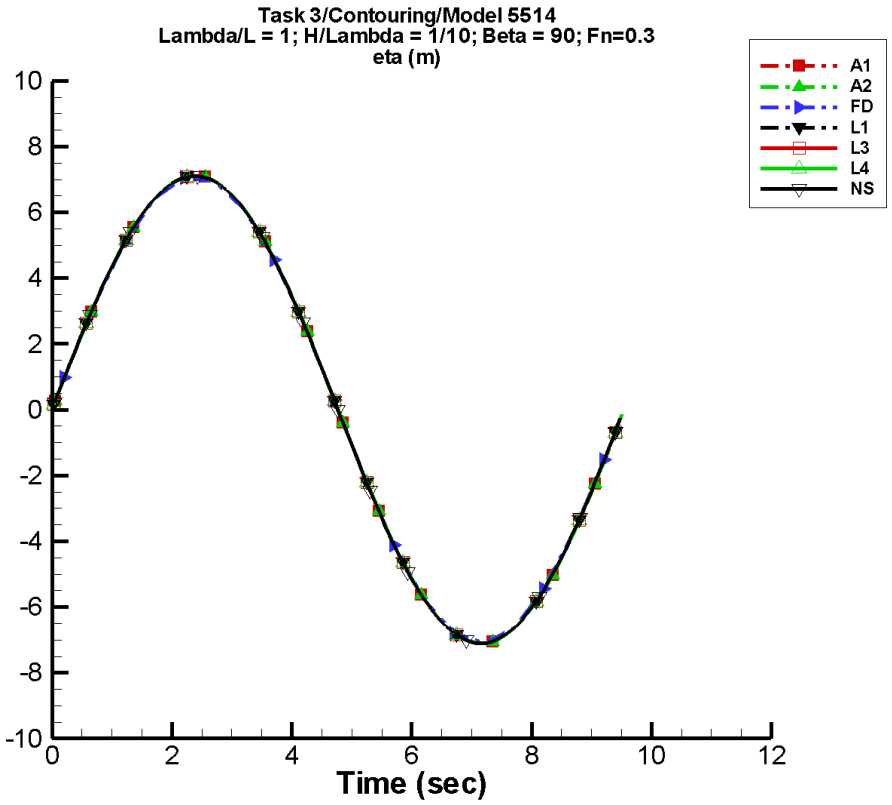
Figure J–3. Time history of η for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–5. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of η for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (m)	a_1 (m)	Φ_1 (deg)	a_2 (m)	Φ_2 (deg)
A1	-1.59E-03	7.12	-1	2.34E-03	-20
A2	-1.59E-03	7.12	-1	2.34E-03	-20
FD	9.29E-04	7.10	2	1.46E-03	132
L1	-5.51E-05	7.10	0	2.59E-04	-20
L3	-5.51E-05	7.10	0	2.59E-04	-20
L4	-5.51E-05	7.10	0	2.59E-04	-20
NF	—	—	—	—	—
NS	1.19E-03	7.10	0	1.76E-03	163

Table J–6. Minimum and maximum of of η for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (m)	Maximum (m)	Minimum (m)	Maximum (m)
A1	-7.12	7.12	-7.11	7.11
A2	-7.12	7.12	-7.11	7.11
FD	-7.10	7.10	-6.88	6.89
L1	-7.10	7.10	-7.10	7.10
L3	-7.10	7.10	-7.10	7.10
L4	-7.10	7.10	-7.10	7.10
NF	—	—	—	—
NS	-7.10	7.10	-7.08	7.12



Data identically zero, insufficient, or not available from NFA.

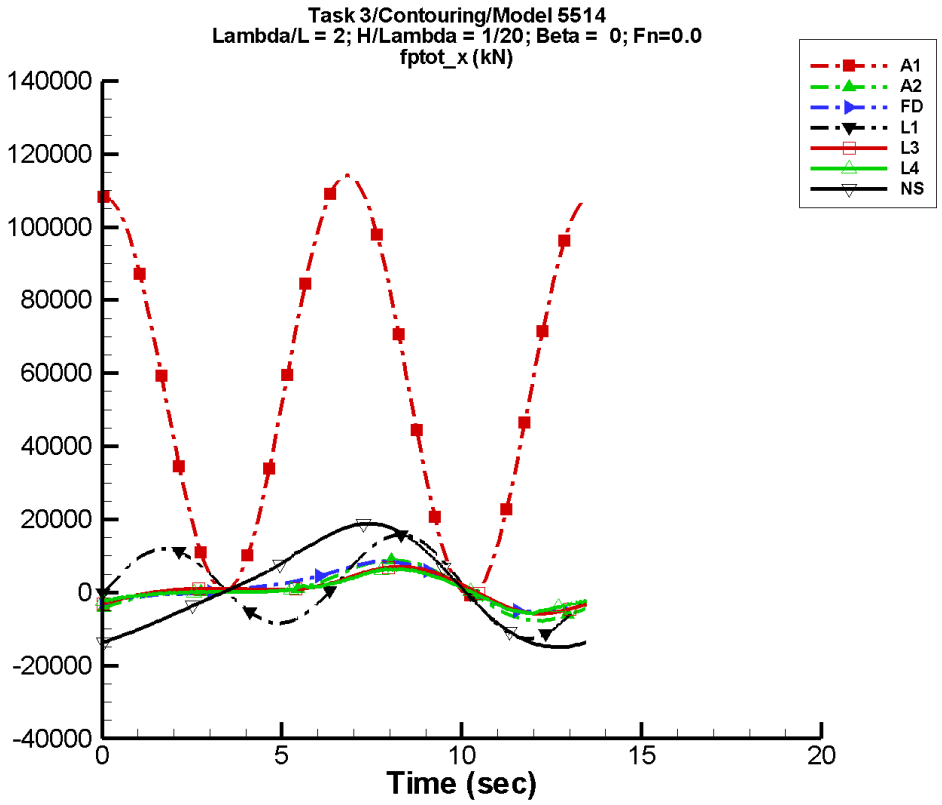
Figure J–4. Time history of η for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–7. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of η for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (m)	a_1 (m)	Φ_1 (deg)	a_2 (m)	Φ_2 (deg)
A1	-4.53E-03	7.12	-4	7.01E-03	-28
A2	-4.53E-03	7.12	-4	7.01E-03	-28
FD	3.19E-05	7.10	-14	3.12E-04	74
L1	-1.34E-03	7.10	-8	2.02E-03	-66
L3	-1.34E-03	7.10	-8	2.02E-03	-66
L4	-1.34E-03	7.10	-8	2.02E-03	-66
NF	—	—	—	—	—
NS	-1.53E-03	7.10	0	2.26E-03	-18

Table J–8. Minimum and maximum of of η for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (m)	Maximum (m)	Minimum (m)	Maximum (m)
A1	-7.12	7.12	-7.04	7.04
A2	-7.12	7.12	-7.04	7.04
FD	-7.10	7.05	-5.17	5.24
L1	-7.10	7.10	-7.07	7.07
L3	-7.10	7.10	-7.07	7.07
L4	-7.10	7.10	-7.07	7.07
NF	—	—	—	—
NS	-7.10	7.10	-7.08	7.11



Data identically zero, insufficient, or not available from NFA.

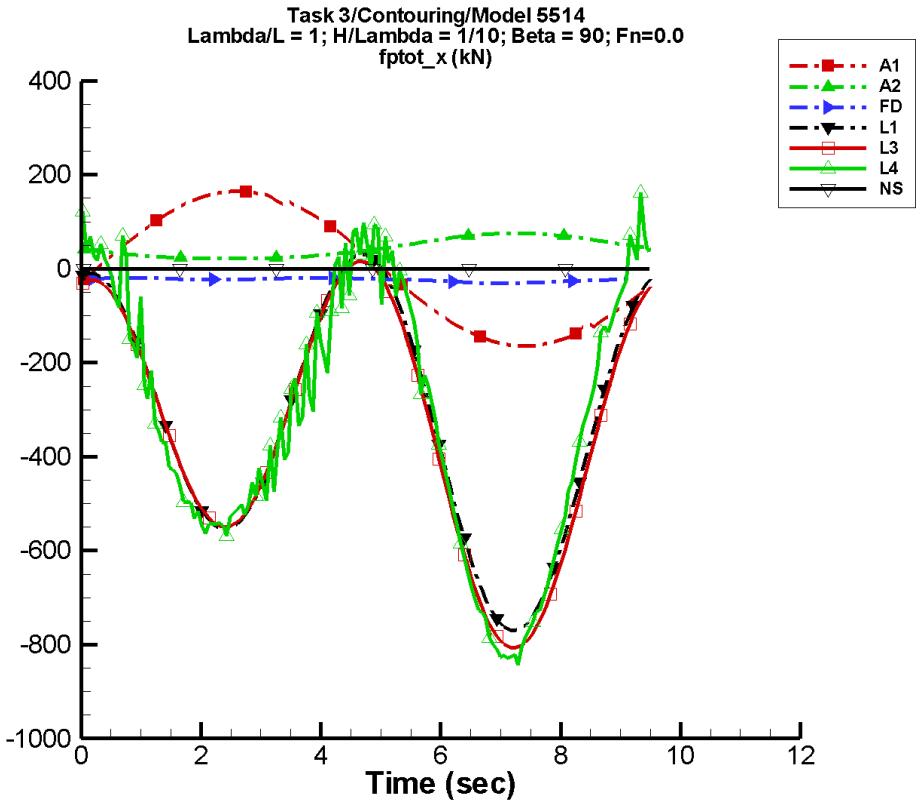
Figure J–5. Time history of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–9. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	5.56E+04	3.19E+03	-81	5.56E+04	77
A2	426.	5.43E+03	-98	3.74E+03	-7
FD	1.20E+03	5.18E+03	-98	2.57E+03	7
L1	1.63E+03	2.84E+03	-91	1.21E+04	-9
L3	707.	3.94E+03	-99	2.97E+03	-22
L4	370.	3.57E+03	-100	2.48E+03	-11
NF	—	—	—	—	—
NS	904.	1.57E+04	-91	3.41E+03	16

Table J–10. Minimum and maximum of of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-870.	1.14E+05	358.	1.13E+05
A2	-7.81E+03	8.83E+03	-7.54E+03	8.65E+03
FD	-5.38E+03	8.48E+03	-3.43E+03	6.42E+03
L1	-1.27E+04	1.57E+04	-1.26E+04	1.56E+04
L3	-5.80E+03	7.02E+03	-5.76E+03	6.99E+03
L4	-5.80E+03	6.46E+03	-5.51E+03	6.32E+03
NF	—	—	—	—
NS	-1.50E+04	1.88E+04	-1.49E+04	1.87E+04



Data identically zero, insufficient, or not available from NFA.

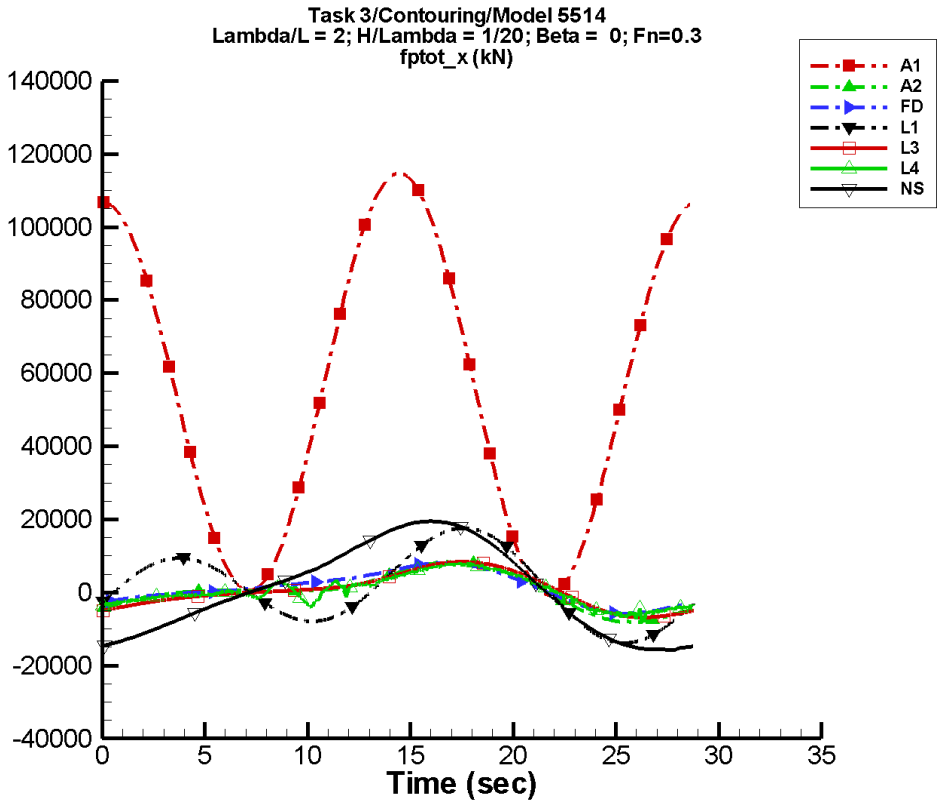
Figure J–6. Time history of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–11. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	8.57E-02	165.	-14	0.160	-111
A2	44.6	26.7	172	4.12	-107
FD	-23.4	4.01	-16	2.91	61
L1	-328.	110.	-20	334.	72
L3	-345.	130.	-18	334.	72
L4	-319.	96.3	-3	368.	75
NF	—	—	—	—	—
NS	-1.63E-05	2.09E-03	-93	4.77E-04	-4

Table J–12. Minimum and maximum of of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-165.	165.	-163.	163.
A2	22.2	75.5	22.2	75.0
FD	-30.5	-19.8	-26.4	-20.5
L1	-770.	30.4	-764.	25.1
L3	-807.	15.2	-801.	9.89
L4	-843.	167.	-821.	89.5
NF	—	—	—	—
NS	-2.14E-03	2.36E-03	-2.13E-03	2.35E-03



Data identically zero, insufficient, or not available from NFA.

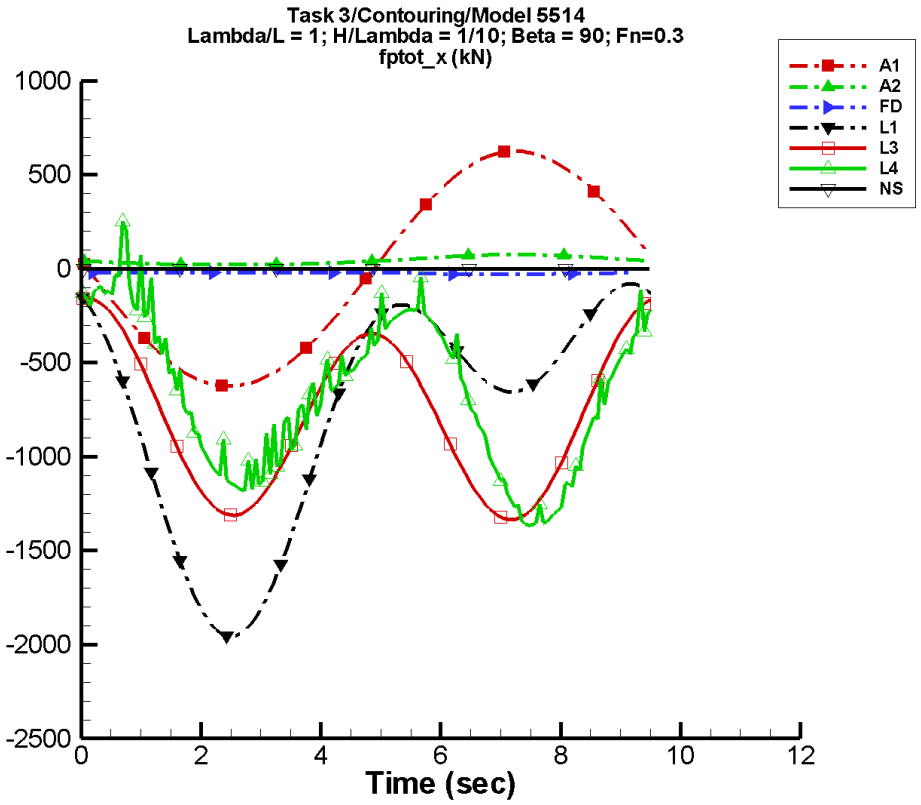
Figure J–7. Time history of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–13. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	5.54E+04	4.08E+03	-84	5.53E+04	86
A2	280.	5.40E+03	-90	3.74E+03	0
FD	1.16E+03	5.27E+03	-83	2.37E+03	20
L1	1.36E+03	5.07E+03	-97	1.20E+04	4
L3	456.	5.58E+03	-100	3.00E+03	-10
L4	381.	4.61E+03	-99	3.06E+03	0
NF	—	—	—	—	—
NS	657.	1.63E+04	-92	3.74E+03	11

Table J–14. Minimum and maximum of of F_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-642.	1.15E+05	-375.	1.14E+05
A2	-8.15E+03	8.45E+03	-8.04E+03	8.36E+03
FD	-5.81E+03	8.07E+03	-5.21E+03	7.56E+03
L1	-1.38E+04	1.76E+04	-1.38E+04	1.76E+04
L3	-6.82E+03	8.37E+03	-6.81E+03	8.36E+03
L4	-8.05E+03	8.22E+03	-6.37E+03	7.73E+03
NF	—	—	—	—
NS	-1.57E+04	1.95E+04	-1.56E+04	1.94E+04



Data identically zero, insufficient, or not available from NFA.

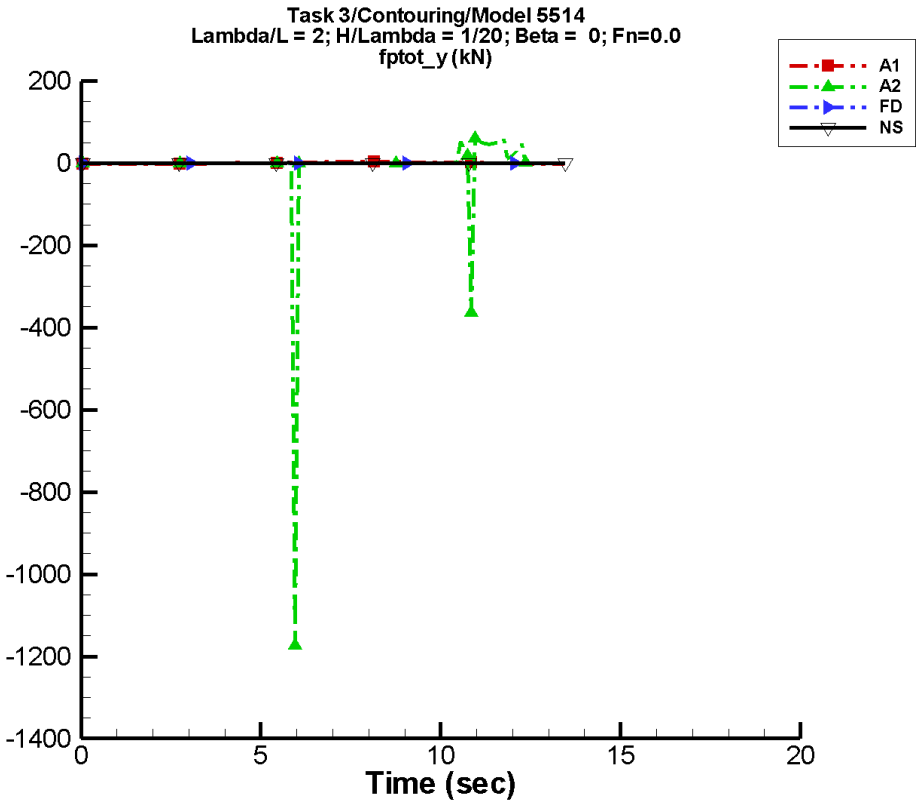
Figure J–8. Time history of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–15. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	0.323	626.	172	0.347	135
A2	44.6	26.7	172	4.12	-107
FD	-23.4	4.01	-16	2.91	61
L1	-770.	654.	164	535.	68
L3	-787.	95.5	72	535.	68
L4	-659.	78.9	17	542.	41
NF	—	—	—	—	—
NS	-2.10E-05	2.09E-03	-94	4.78E-04	-4

Table J–16. Minimum and maximum of of F_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-625.	626.	-618.	619.
A2	22.2	75.5	22.2	75.0
FD	-30.5	-19.8	-26.4	-20.5
L1	-1.96E+03	-80.3	-1.95E+03	-88.0
L3	-1.33E+03	-156.	-1.33E+03	-156.
L4	-1.36E+03	274.	-1.34E+03	-9.60
NF	—	—	—	—
NS	-2.13E-03	2.37E-03	-2.13E-03	2.36E-03



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

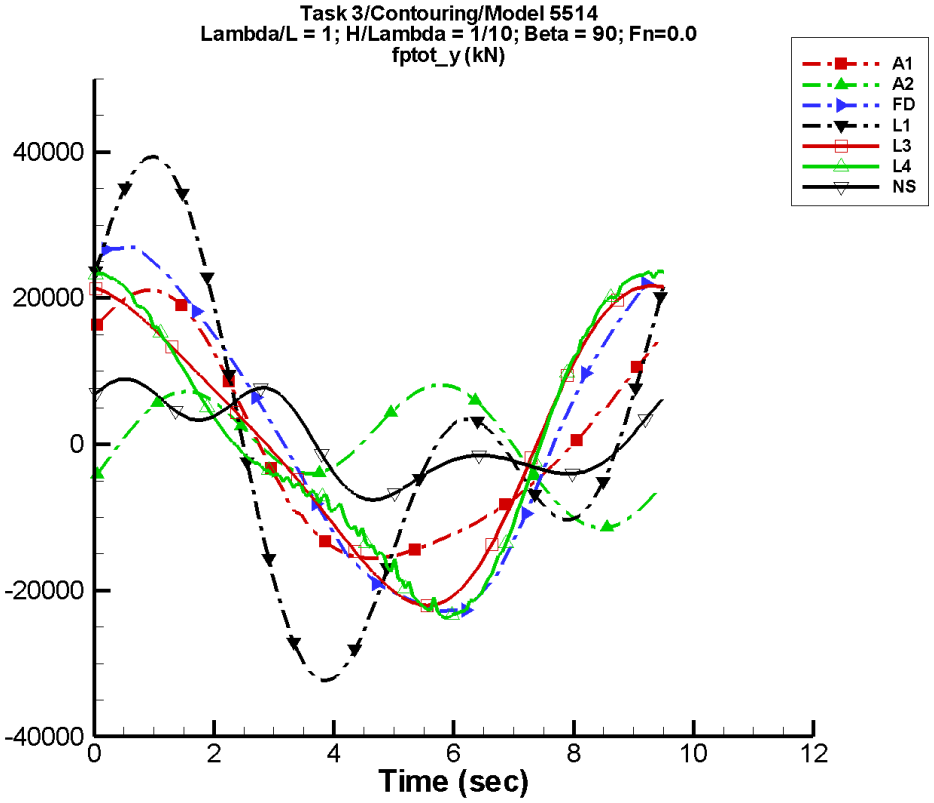
Figure J–9. Time history of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–17. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	8.73E-03	2.68	-133	2.08E-02	125
A2	-6.80	21.8	114	13.4	-75
FD	6.13E-06	3.80E-06	-175	3.42E-05	115
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-6.18E-05	1.44E-03	56	2.72E-04	-151

Table J–18. Minimum and maximum of of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-3.89	2.78	-2.95	2.75
A2	-1.17E+03	60.0	-156.	45.0
FD	-9.63E-05	1.45E-04	-1.76E-05	2.28E-05
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.888	0.864	-2.24E-02	2.05E-02



Data identically zero, insufficient, or not available from NFA.

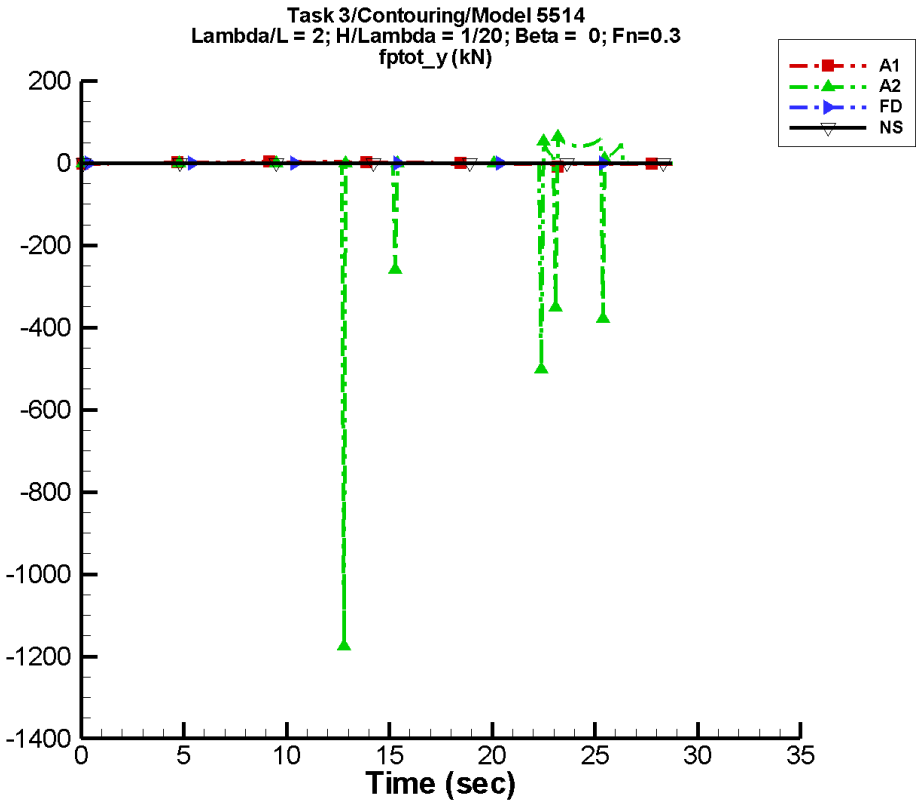
Figure J–10. Time history of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–19. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	31.8	1.74E+04	64	4.11E+03	-9
A2	-265.	4.17E+03	-60	7.49E+03	-15
FD	1.46E+03	2.49E+04	52	1.84E+03	102
L1	675.	2.16E+04	71	1.98E+04	-13
L3	653.	2.07E+04	70	4.04E+03	154
L4	310.	2.10E+04	71	6.17E+03	125
NF	—	—	—	—	—
NS	465.	5.84E+03	46	1.05E+03	-21

Table J–20. Minimum and maximum of of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.56E+04	2.11E+04	-1.55E+04	2.07E+04
A2	-1.14E+04	8.11E+03	-1.11E+04	7.78E+03
FD	-2.28E+04	2.71E+04	-1.62E+04	2.60E+04
L1	-3.23E+04	3.93E+04	-3.20E+04	3.89E+04
L3	-2.20E+04	2.17E+04	-2.19E+04	2.16E+04
L4	-2.38E+04	2.37E+04	-2.32E+04	2.34E+04
NF	—	—	—	—
NS	-7.60E+03	8.93E+03	-7.50E+03	8.82E+03



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

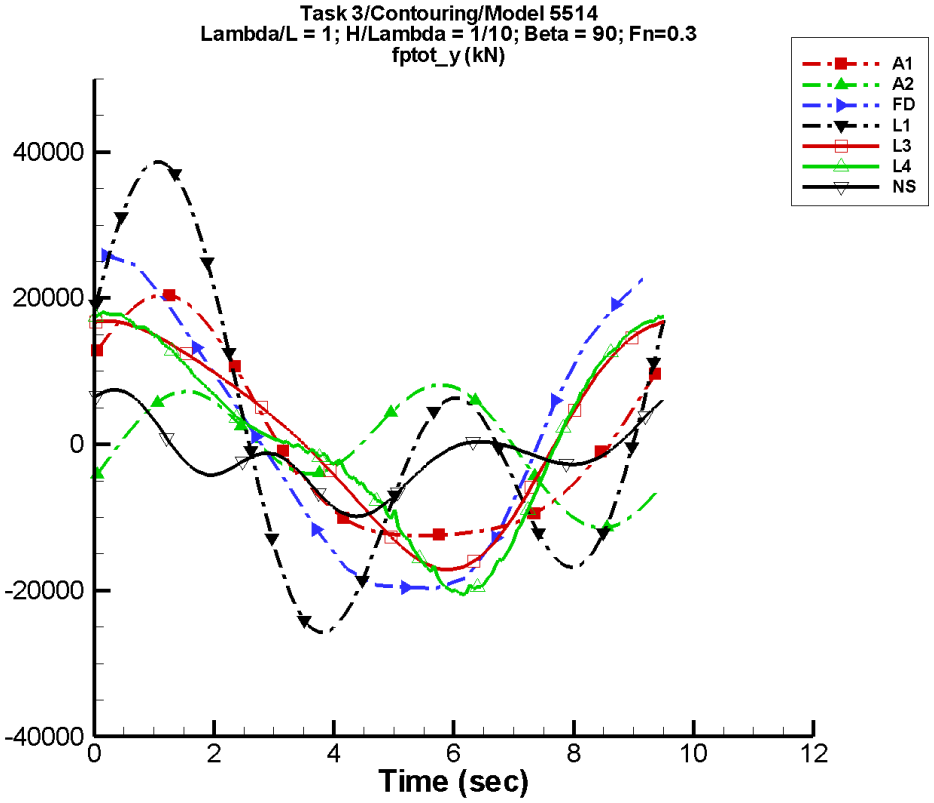
Figure J–11. Time history of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–21. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	1.55E-02	2.59	-44	1.65E-02	-178
A2	-6.15	13.5	121	2.46	-74
FD	7.84E-06	9.78E-06	138	3.08E-06	-89
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-3.72E-04	7.96E-04	62	2.54E-03	-134

Table J–22. Minimum and maximum of of F_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-9.01	9.34	-3.07	2.90
A2	-1.18E+03	64.7	-157.	47.2
FD	-1.04E-04	9.18E-05	-1.40E-05	4.22E-05
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.344	0.334	-1.88E-02	1.82E-02



Data identically zero, insufficient, or not available from NFA.

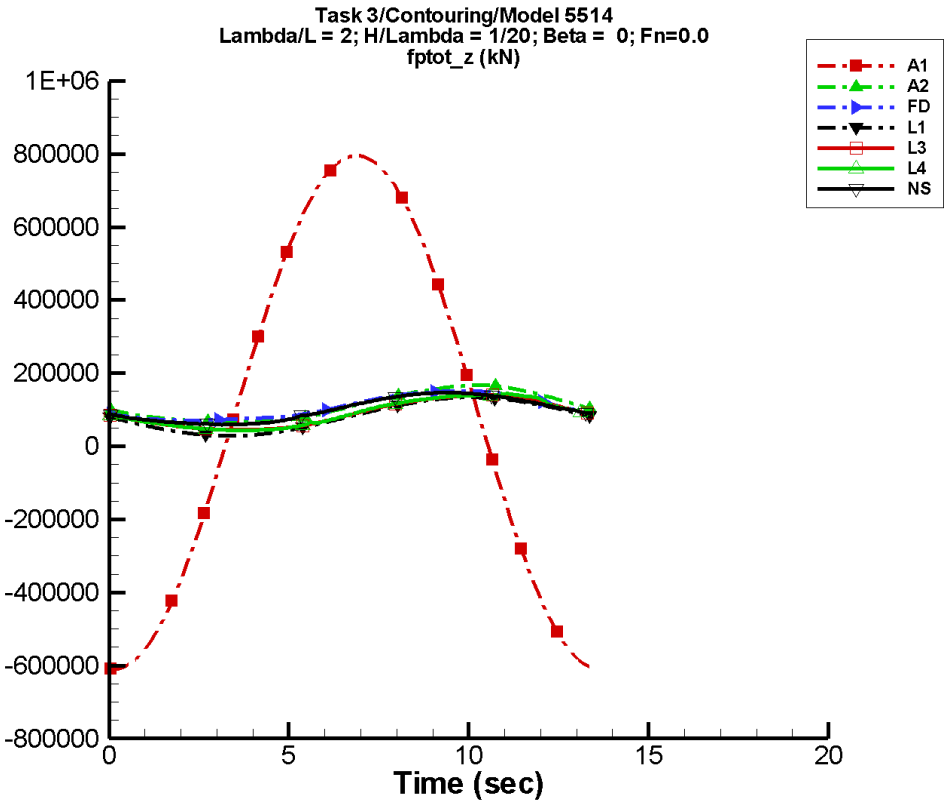
Figure J–12. Time history of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–23. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-7.97	1.62E+04	46	4.12E+03	-10
A2	-265.	4.17E+03	-60	7.49E+03	-15
FD	1.45E+03	2.32E+04	64	1.84E+03	101
L1	1.36E+03	1.69E+04	55	2.10E+04	-11
L3	1.34E+03	1.62E+04	54	3.14E+03	138
L4	692.	1.61E+04	55	5.30E+03	116
NF	—	—	—	—	—
NS	-1.68E+03	4.86E+03	103	2.01E+03	32

Table J–24. Minimum and maximum of of F_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.25E+04	2.05E+04	-1.25E+04	2.01E+04
A2	-1.14E+04	8.11E+03	-1.11E+04	7.78E+03
FD	-1.97E+04	2.59E+04	-1.51E+04	2.37E+04
L1	-2.57E+04	3.87E+04	-2.56E+04	3.83E+04
L3	-1.72E+04	1.69E+04	-1.71E+04	1.69E+04
L4	-2.05E+04	1.81E+04	-2.01E+04	1.78E+04
NF	—	—	—	—
NS	-9.87E+03	7.48E+03	-9.76E+03	7.36E+03



Data identically zero, insufficient, or not available from NFA.

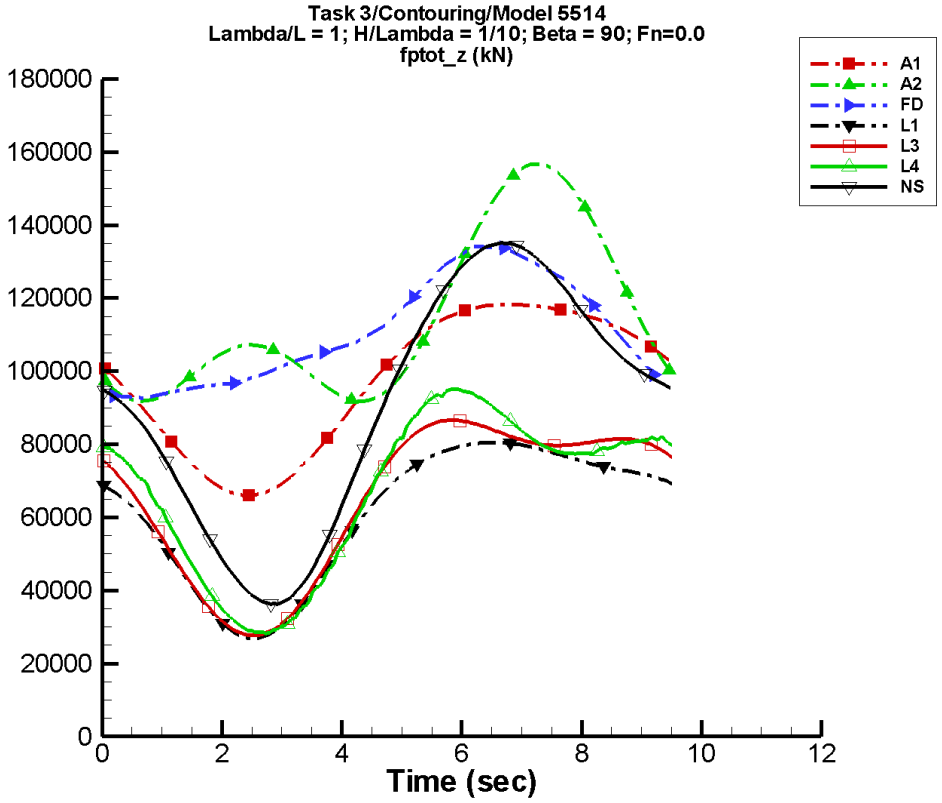
Figure J–13. Time history of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–25. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	9.28E+04	7.04E+05	-98	955.	141
A2	1.11E+05	5.01E+04	178	6.34E+03	-95
FD	1.07E+05	4.20E+04	-168	5.68E+03	-87
L1	8.09E+04	5.23E+04	176	262.	-11
L3	8.95E+04	4.82E+04	173	3.37E+03	-82
L4	9.02E+04	4.97E+04	173	2.94E+03	-88
NF	—	—	—	—	—
NS	1.01E+05	4.35E+04	-165	3.53E+03	-22

Table J–26. Minimum and maximum of of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-6.10E+05	7.95E+05	-6.13E+05	7.91E+05
A2	6.74E+04	1.67E+05	6.75E+04	1.66E+05
FD	7.10E+04	1.52E+05	7.29E+04	1.46E+05
L1	2.82E+04	1.34E+05	2.83E+04	1.34E+05
L3	4.49E+04	1.40E+05	4.50E+04	1.40E+05
L4	4.32E+04	1.44E+05	4.37E+04	1.43E+05
NF	—	—	—	—
NS	5.72E+04	1.47E+05	5.97E+04	1.46E+05



Data identically zero, insufficient, or not available from NFA.

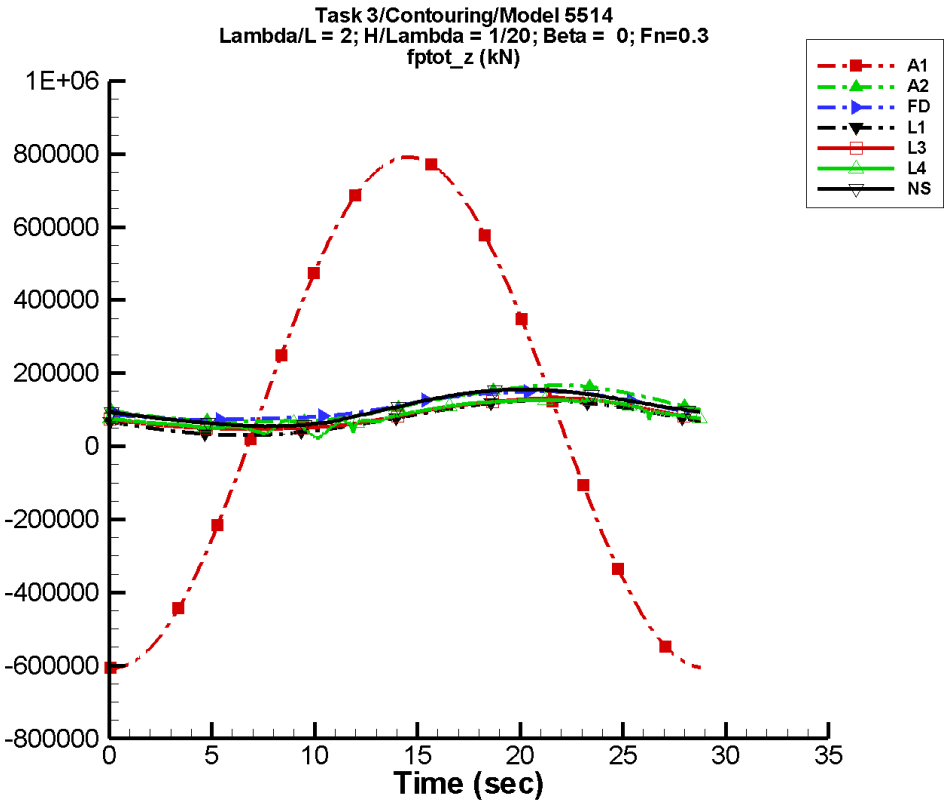
Figure J–14. Time history of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–27. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	9.69E+04	2.56E+04	176	5.04E+03	69
A2	1.14E+05	2.51E+04	172	1.77E+04	-106
FD	1.10E+05	1.93E+04	-165	5.32E+03	-100
L1	6.09E+04	2.42E+04	171	8.60E+03	54
L3	6.49E+04	2.65E+04	172	1.10E+04	59
L4	6.72E+04	2.66E+04	171	1.37E+04	40
NF	—	—	—	—	—
NS	8.98E+04	4.37E+04	178	1.16E+04	21

Table J–28. Minimum and maximum of of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	6.60E+04	1.18E+05	6.65E+04	1.18E+05
A2	9.18E+04	1.57E+05	9.25E+04	1.56E+05
FD	9.25E+04	1.34E+05	9.33E+04	1.24E+05
L1	2.69E+04	8.05E+04	2.72E+04	8.04E+04
L3	2.77E+04	8.66E+04	2.79E+04	8.64E+04
L4	2.82E+04	9.50E+04	2.87E+04	9.46E+04
NF	—	—	—	—
NS	3.63E+04	1.35E+05	3.65E+04	1.35E+05



Data identically zero, insufficient, or not available from NFA.

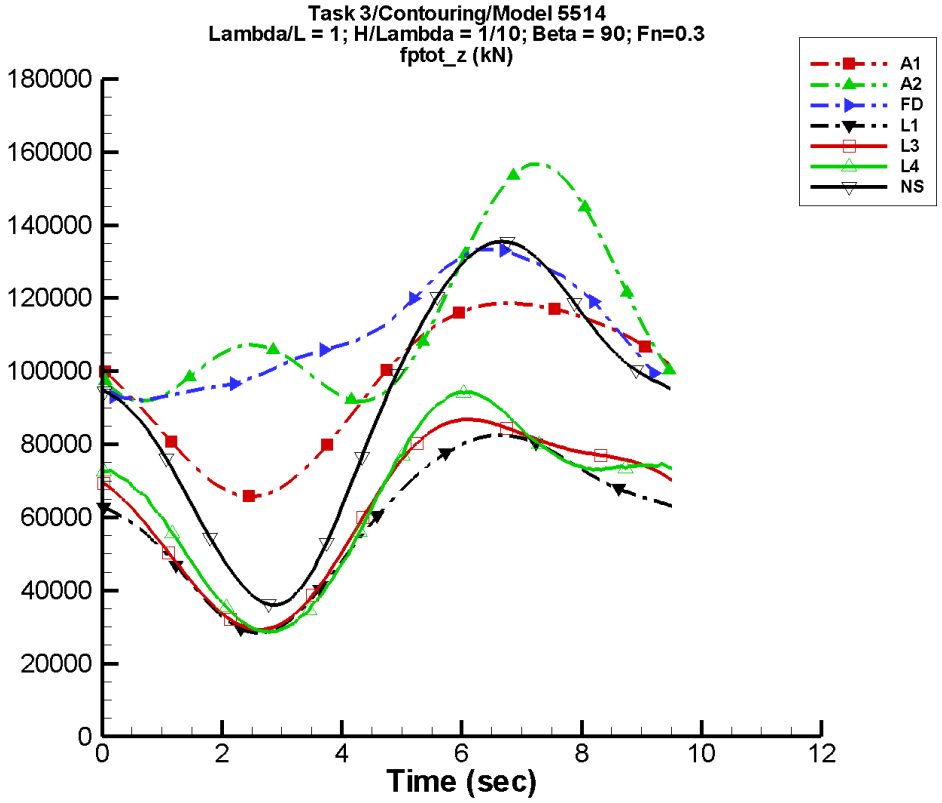
Figure J–15. Time history of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–29. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	9.24E+04	7.01E+05	-93	685.	130
A2	1.11E+05	5.02E+04	-178	6.37E+03	-89
FD	1.07E+05	4.00E+04	-162	5.90E+03	-70
L1	7.63E+04	4.72E+04	-172	1.65E+03	-82
L3	8.49E+04	4.29E+04	-174	4.77E+03	-80
L4	8.47E+04	4.12E+04	-175	4.63E+03	-45
NF	—	—	—	—	—
NS	1.04E+05	4.87E+04	-170	6.82E+03	-4

Table J–30. Minimum and maximum of of F_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-6.07E+05	7.91E+05	-6.08E+05	7.91E+05
A2	6.69E+04	1.67E+05	6.75E+04	1.67E+05
FD	7.29E+04	1.50E+05	7.35E+04	1.49E+05
L1	3.03E+04	1.26E+05	3.03E+04	1.26E+05
L3	4.77E+04	1.32E+05	4.77E+04	1.31E+05
L4	2.22E+04	1.29E+05	2.56E+04	1.27E+05
NF	—	—	—	—
NS	5.42E+04	1.56E+05	5.49E+04	1.56E+05



Data identically zero, insufficient, or not available from NFA.

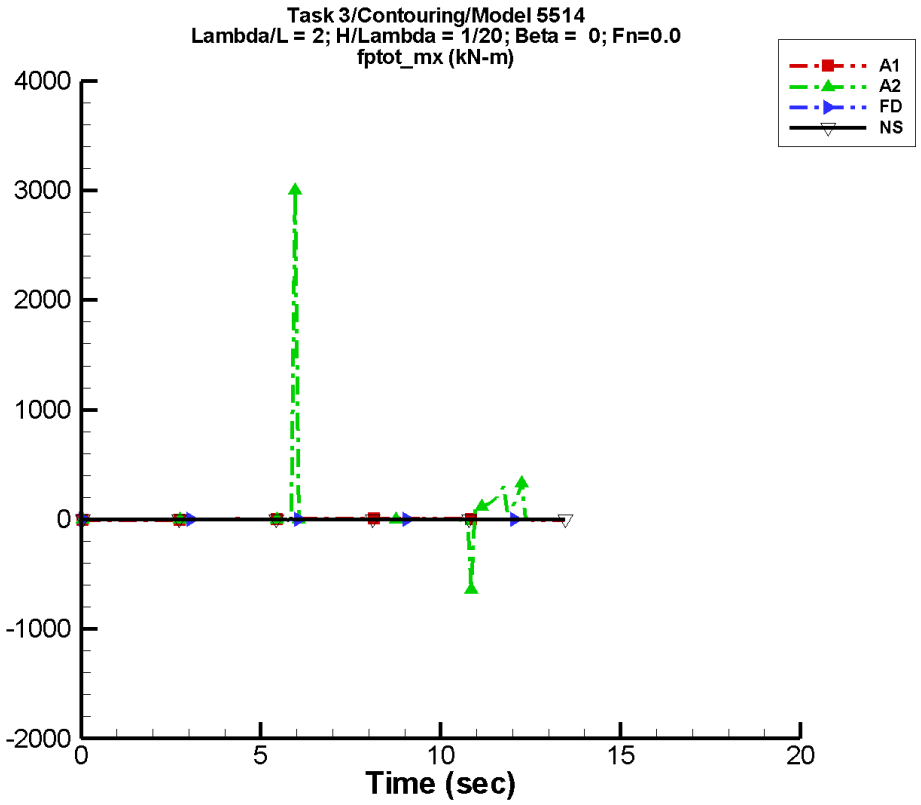
Figure J–16. Time history of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–31. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	9.63E+04	2.58E+04	176	4.66E+03	60
A2	1.14E+05	2.51E+04	172	1.77E+04	-106
FD	1.10E+05	1.92E+04	-165	5.13E+03	-110
L1	5.91E+04	2.41E+04	173	6.50E+03	29
L3	6.31E+04	2.62E+04	173	8.45E+03	42
L4	6.47E+04	2.60E+04	172	1.24E+04	25
NF	—	—	—	—	—
NS	8.99E+04	4.37E+04	178	1.22E+04	20

Table J–32. Minimum and maximum of of F_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	6.57E+04	1.19E+05	6.62E+04	1.18E+05
A2	9.18E+04	1.57E+05	9.25E+04	1.56E+05
FD	9.20E+04	1.33E+05	9.30E+04	1.24E+05
L1	2.83E+04	8.25E+04	2.86E+04	8.24E+04
L3	2.92E+04	8.68E+04	2.95E+04	8.67E+04
L4	2.86E+04	9.43E+04	2.89E+04	9.40E+04
NF	—	—	—	—
NS	3.59E+04	1.35E+05	3.62E+04	1.35E+05



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

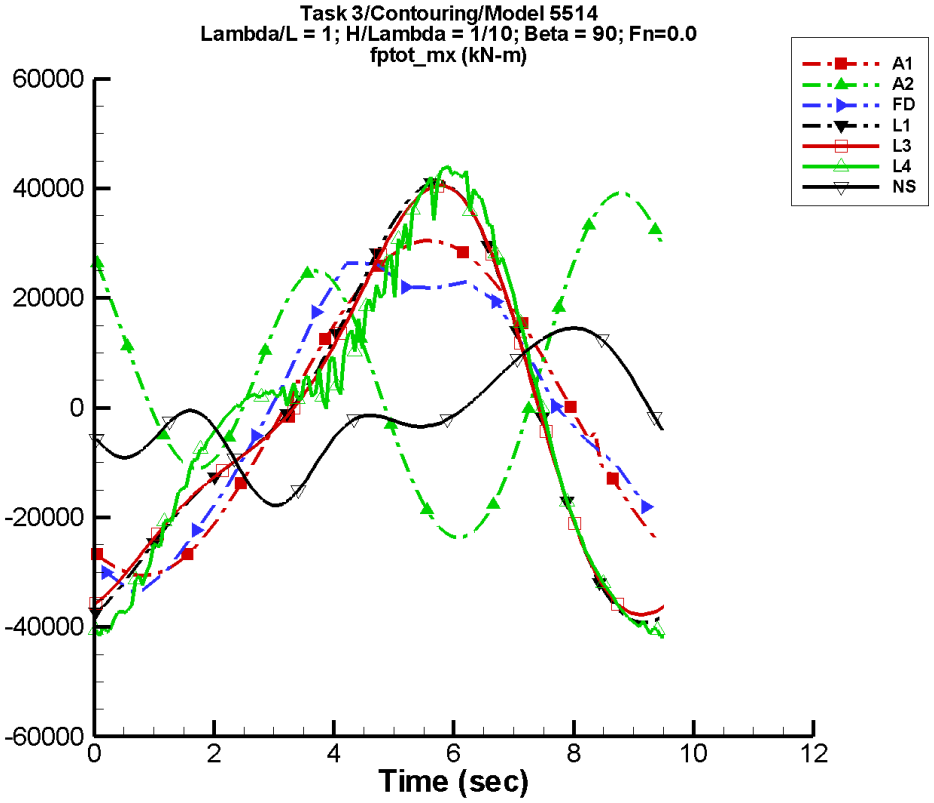
Figure J–17. Time history of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–33. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	1.39E-02	6.42	-128	5.98E-02	118
A2	37.0	21.1	-84	60.9	140
FD	2.13E-05	9.08E-05	-153	1.29E-04	21
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	3.15E-03	4.18E-03	-145	2.94E-03	177

Table J–34. Minimum and maximum of of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-9.37	8.09	-7.19	7.02
A2	-639.	3.00E+03	-50.4	400.
FD	-4.75E-04	5.36E-04	-7.11E-05	1.47E-04
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-4.07	4.28	-9.19E-02	0.119



Data identically zero, insufficient, or not available from NFA.

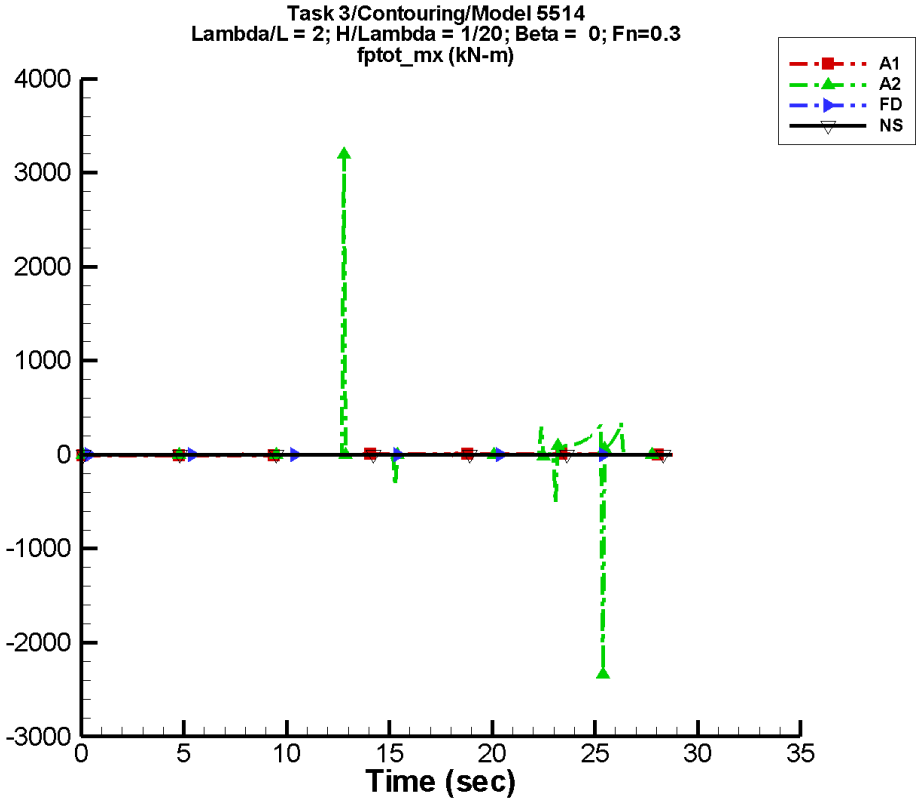
Figure J–18. Time history of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–35. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	36.9	3.03E+04	-125	69.3	-171
A2	6.94E+03	1.15E+04	78	2.41E+04	148
FD	-18.5	2.86E+04	-127	4.03E+03	152
L1	-1.85E+03	3.52E+04	-114	1.12E+04	-27
L3	-1.83E+03	3.42E+04	-114	1.13E+04	-26
L4	-1.44E+03	3.42E+04	-112	1.42E+04	-53
NF	—	—	—	—	—
NS	-1.27E+03	9.70E+03	161	2.93E+03	-111

Table J–36. Minimum and maximum of of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-3.06E+04	3.05E+04	-3.02E+04	3.01E+04
A2	-2.37E+04	3.92E+04	-2.28E+04	3.81E+04
FD	-3.43E+04	2.63E+04	-3.06E+04	2.02E+04
L1	-3.92E+04	4.12E+04	-3.90E+04	4.09E+04
L3	-3.78E+04	4.05E+04	-3.76E+04	4.02E+04
L4	-4.17E+04	4.40E+04	-4.09E+04	4.24E+04
NF	—	—	—	—
NS	-1.78E+04	1.45E+04	-1.76E+04	1.44E+04



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

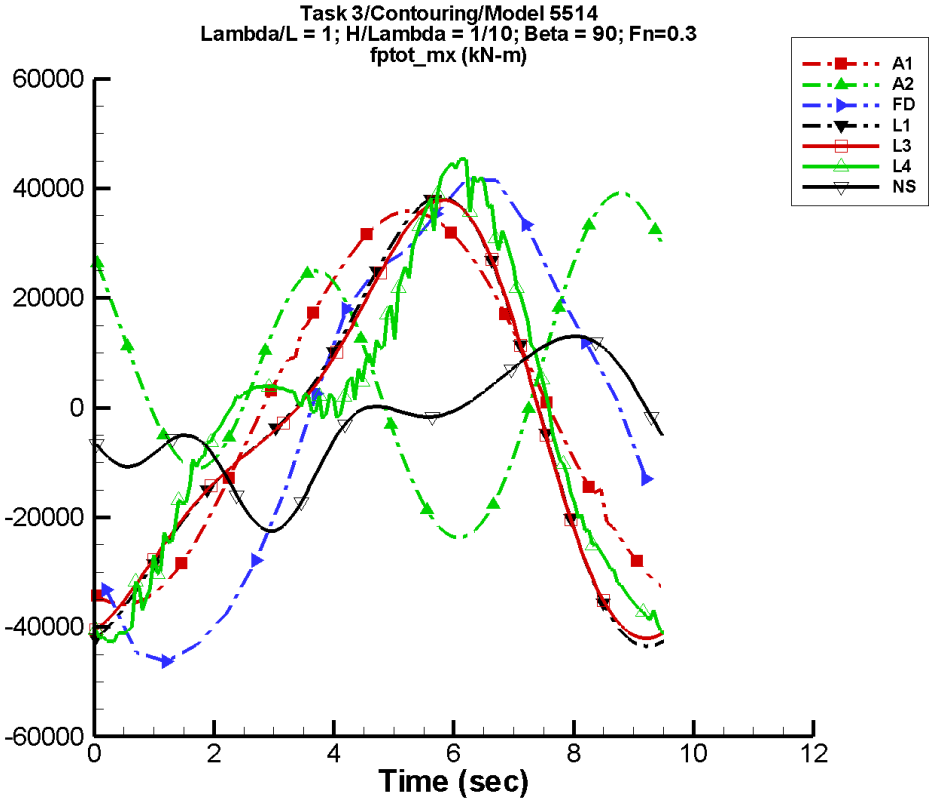
Figure J–19. Time history of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–37. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-5.72E-02	9.18	-154	9.12E-02	33
A2	4.78	33.1	-168	51.2	120
FD	-3.77E-05	5.38E-05	-39	7.31E-05	76
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-1.04E-03	6.31E-03	20	9.29E-03	132

Table J–38. Minimum and maximum of of M_x^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-13.6	13.0	-10.4	10.5
A2	-6.47E+03	3.20E+03	-863.	426.
FD	-6.61E-04	5.22E-04	-1.73E-04	2.73E-04
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.804	1.14	-5.47E-02	5.55E-02



Data identically zero, insufficient, or not available from NFA.

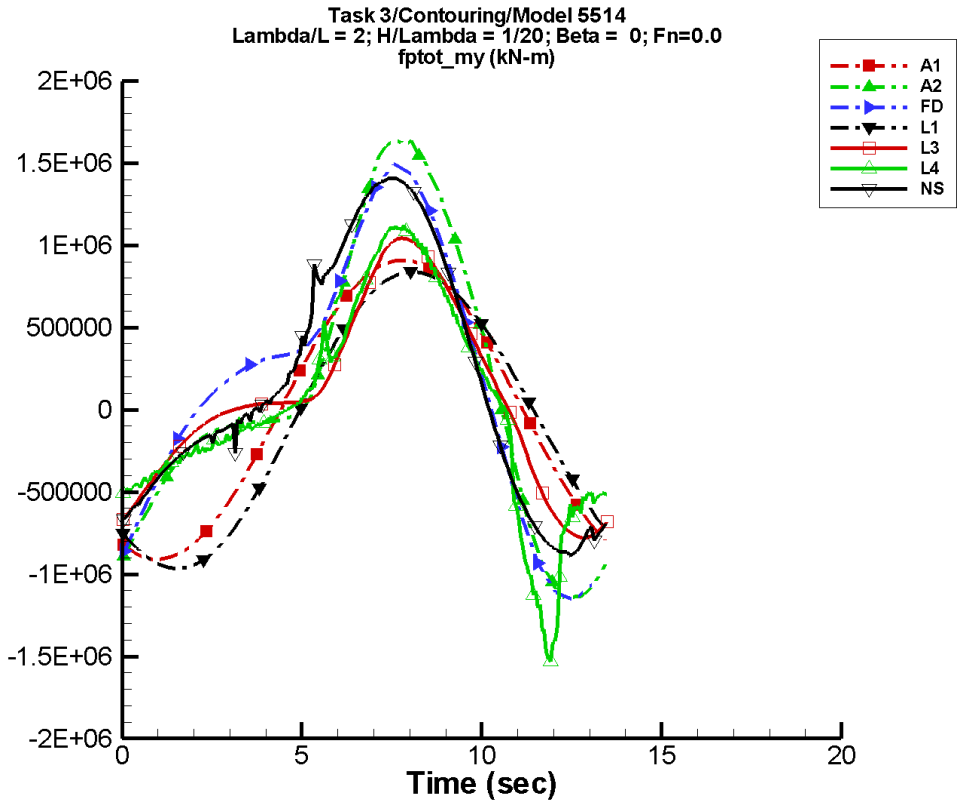
Figure J–20. Time history of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–39. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-4.73	3.54E+04	-112	84.4	-136
A2	6.94E+03	1.15E+04	78	2.41E+04	148
FD	-18.6	4.33E+04	-156	4.03E+03	152
L1	-4.08E+03	3.59E+04	-114	1.12E+04	-36
L3	-4.07E+03	3.48E+04	-114	1.12E+04	-36
L4	-2.00E+03	3.25E+04	-118	1.57E+04	-68
NF	—	—	—	—	—
NS	-2.77E+03	1.14E+04	170	1.04E+03	-132

Table J–40. Minimum and maximum of of M_x^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-3.59E+04	3.58E+04	-3.54E+04	3.54E+04
A2	-2.37E+04	3.92E+04	-2.28E+04	3.81E+04
FD	-4.64E+04	4.17E+04	-3.99E+04	3.11E+04
L1	-4.35E+04	3.84E+04	-4.33E+04	3.82E+04
L3	-4.20E+04	3.79E+04	-4.18E+04	3.76E+04
L4	-4.27E+04	4.54E+04	-4.19E+04	4.36E+04
NF	—	—	—	—
NS	-2.25E+04	1.30E+04	-2.22E+04	1.29E+04



Data identically zero, insufficient, or not available from NFA.

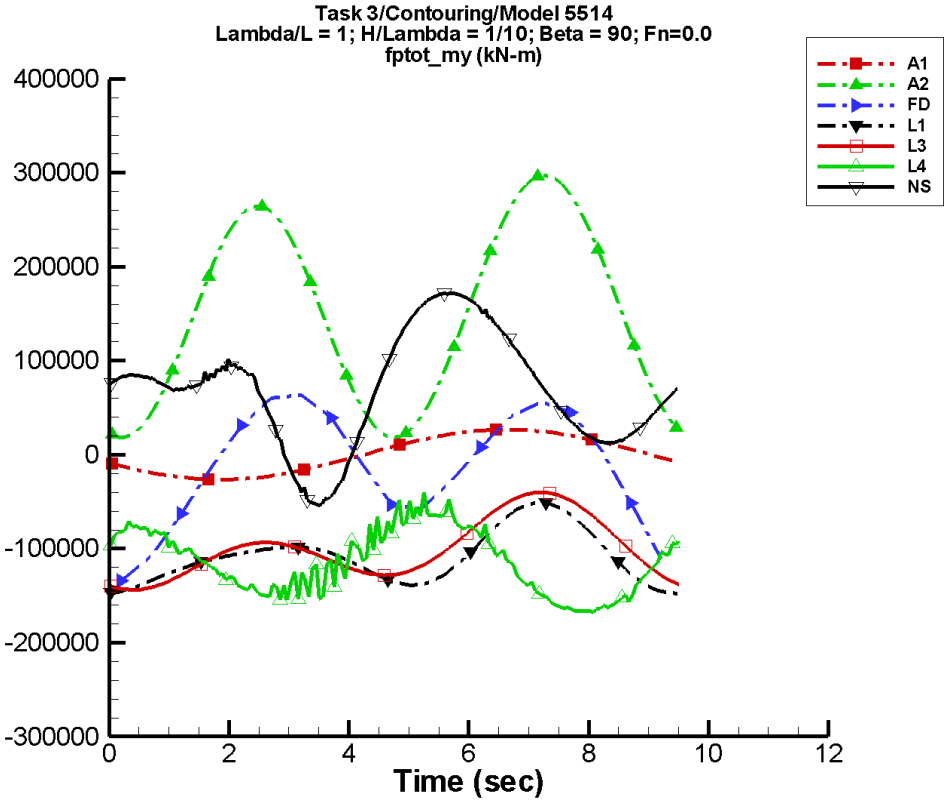
Figure J–21. Time history of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–41. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	1.35E+03	9.11E+05	-122	1.50E+03	-169
A2	1.16E+05	1.07E+06	-108	5.36E+05	-8
FD	1.43E+05	1.02E+06	-93	4.48E+05	-12
L1	-5.92E+04	9.01E+05	-134	2.19E+04	104
L3	7.28E+04	6.78E+05	-110	3.30E+05	-24
L4	876.	7.45E+05	-102	3.86E+05	0
NF	—	—	—	—	—
NS	1.46E+05	9.74E+05	-94	3.56E+05	24

Table J–42. Minimum and maximum of of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-9.18E+05	9.08E+05	-9.07E+05	9.03E+05
A2	-1.14E+06	1.65E+06	-1.13E+06	1.63E+06
FD	-1.16E+06	1.50E+06	-8.26E+05	1.09E+06
L1	-9.66E+05	8.38E+05	-9.64E+05	8.36E+05
L3	-7.81E+05	1.04E+06	-7.75E+05	1.04E+06
L4	-1.53E+06	1.12E+06	-1.40E+06	1.10E+06
NF	—	—	—	—
NS	-8.88E+05	1.41E+06	-8.70E+05	1.40E+06



Data identically zero, insufficient, or not available from NFA.

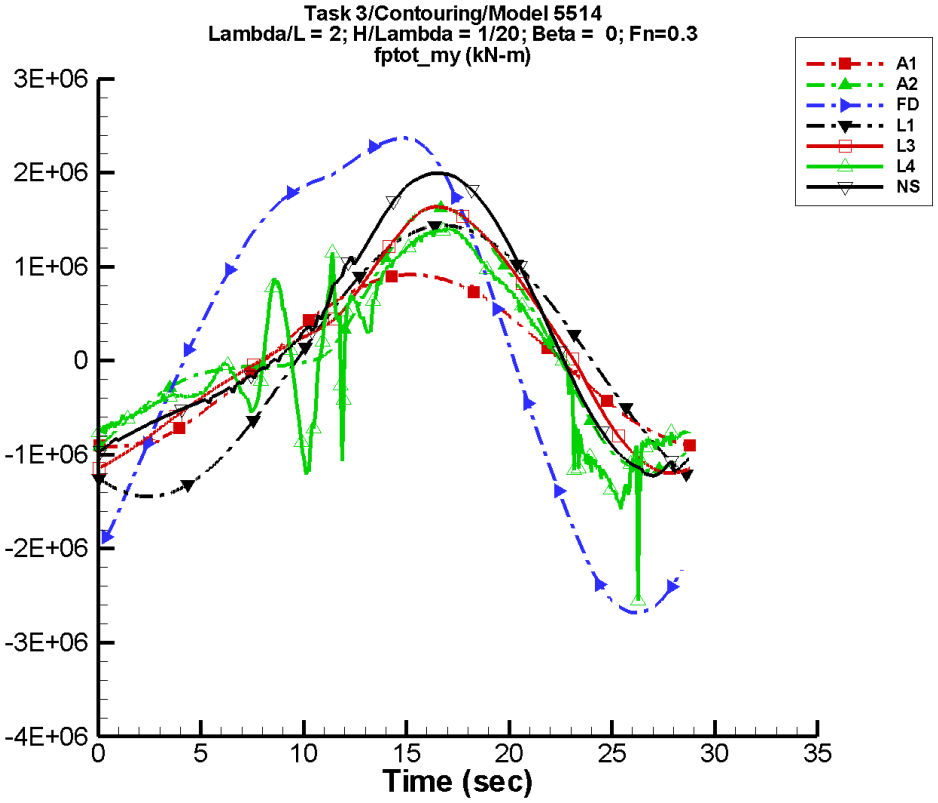
Figure J–22. Time history of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–43. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	36.3	2.66E+04	-165	45.3	177
A2	1.49E+05	2.27E+04	173	1.31E+05	-107
FD	-1.46E+04	3.90E+04	-107	7.46E+04	-140
L1	-1.09E+05	1.61E+04	-169	3.05E+04	-115
L3	-1.01E+05	2.72E+04	-175	3.33E+04	-115
L4	-1.14E+05	1.49E+04	-89	4.30E+04	33
NF	—	—	—	—	—
NS	6.82E+04	3.34E+04	-146	6.56E+04	4

Table J–44. Minimum and maximum of of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-2.68E+04	2.67E+04	-2.69E+04	2.64E+04
A2	1.84E+04	2.97E+05	1.87E+04	2.92E+05
FD	-1.34E+05	6.45E+04	-9.44E+04	2.27E+04
L1	-1.48E+05	-5.11E+04	-1.47E+05	-5.20E+04
L3	-1.44E+05	-4.02E+04	-1.43E+05	-4.08E+04
L4	-1.68E+05	-4.05E+04	-1.66E+05	-5.96E+04
NF	—	—	—	—
NS	-5.35E+04	1.72E+05	-5.00E+04	1.71E+05



Data identically zero, insufficient, or not available from NFA.

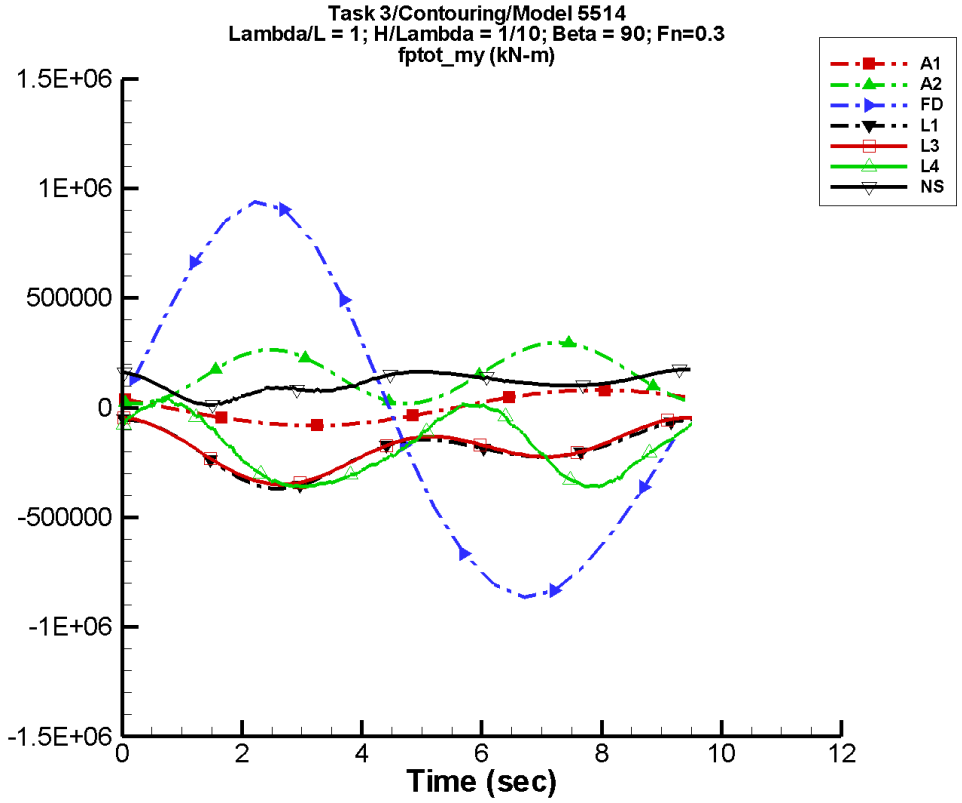
Figure J–23. Time history of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–45. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	815.	9.18E+05	-103	1.66E+03	-150
A2	1.09E+05	1.07E+06	-104	5.40E+05	-3
FD	1.45E+05	2.45E+06	-62	4.45E+05	2
L1	-3.05E+03	1.44E+06	-120	3.07E+03	125
L3	1.28E+05	1.23E+06	-106	3.33E+05	-13
L4	5.76E+03	9.64E+05	-98	5.06E+05	7
NF	—	—	—	—	—
NS	2.32E+05	1.40E+06	-104	4.55E+05	14

Table J–46. Minimum and maximum of of M_y^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-9.25E+05	9.16E+05	-9.23E+05	9.15E+05
A2	-1.18E+06	1.65E+06	-1.17E+06	1.63E+06
FD	-2.68E+06	2.37E+06	-2.56E+06	2.29E+06
L1	-1.45E+06	1.44E+06	-1.44E+06	1.44E+06
L3	-1.20E+06	1.64E+06	-1.19E+06	1.64E+06
L4	-2.55E+06	1.41E+06	-1.48E+06	1.39E+06
NF	—	—	—	—
NS	-1.22E+06	1.99E+06	-1.19E+06	1.99E+06



Data identically zero, insufficient, or not available from NFA.

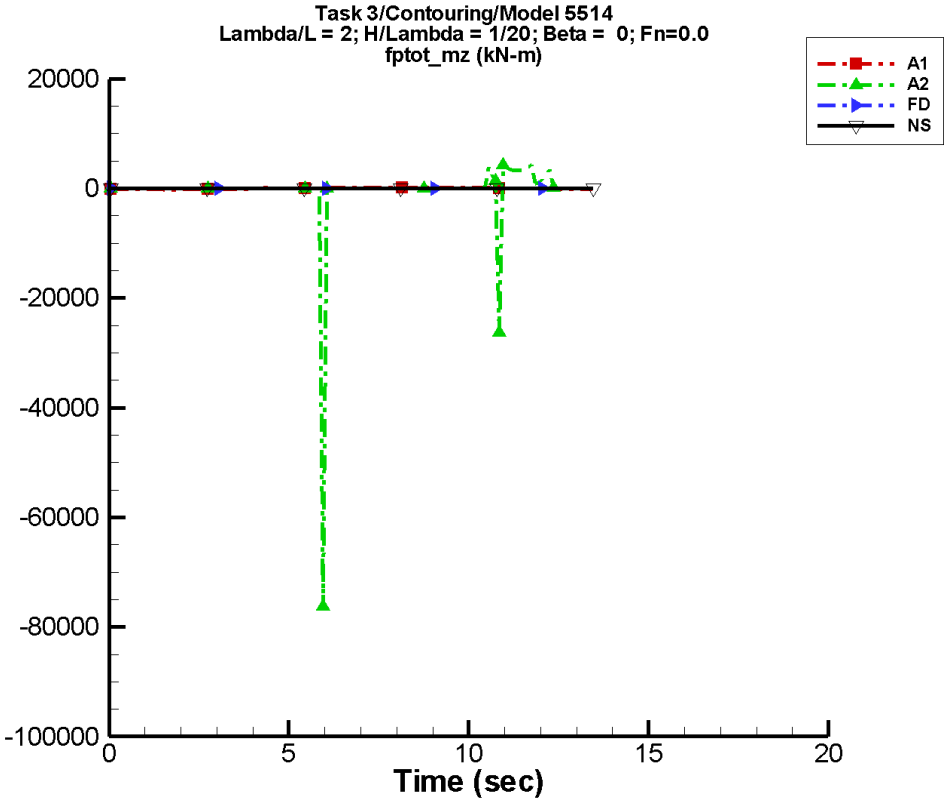
Figure J–24. Time history of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–47. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-27.7	8.15E+04	146	81.2	6
A2	1.49E+05	2.27E+04	173	1.31E+05	-107
FD	-1.51E+04	8.91E+05	-7	8.04E+04	-145
L1	-1.98E+05	7.72E+04	133	9.87E+04	66
L3	-1.89E+05	7.67E+04	133	9.59E+04	66
L4	-1.79E+05	3.31E+04	128	1.77E+05	16
NF	—	—	—	—	—
NS	1.12E+05	3.35E+04	-161	3.91E+04	109

Table J–48. Minimum and maximum of of M_y^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-8.30E+04	8.18E+04	-7.99E+04	7.94E+04
A2	1.84E+04	2.97E+05	1.87E+04	2.92E+05
FD	-8.64E+05	9.38E+05	-6.54E+05	6.34E+05
L1	-3.69E+05	-5.41E+04	-3.67E+05	-5.43E+04
L3	-3.51E+05	-4.51E+04	-3.49E+05	-4.67E+04
L4	-3.60E+05	4.45E+04	-3.57E+05	2.72E+04
NF	—	—	—	—
NS	1.25E+04	1.74E+05	1.58E+04	1.73E+05



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

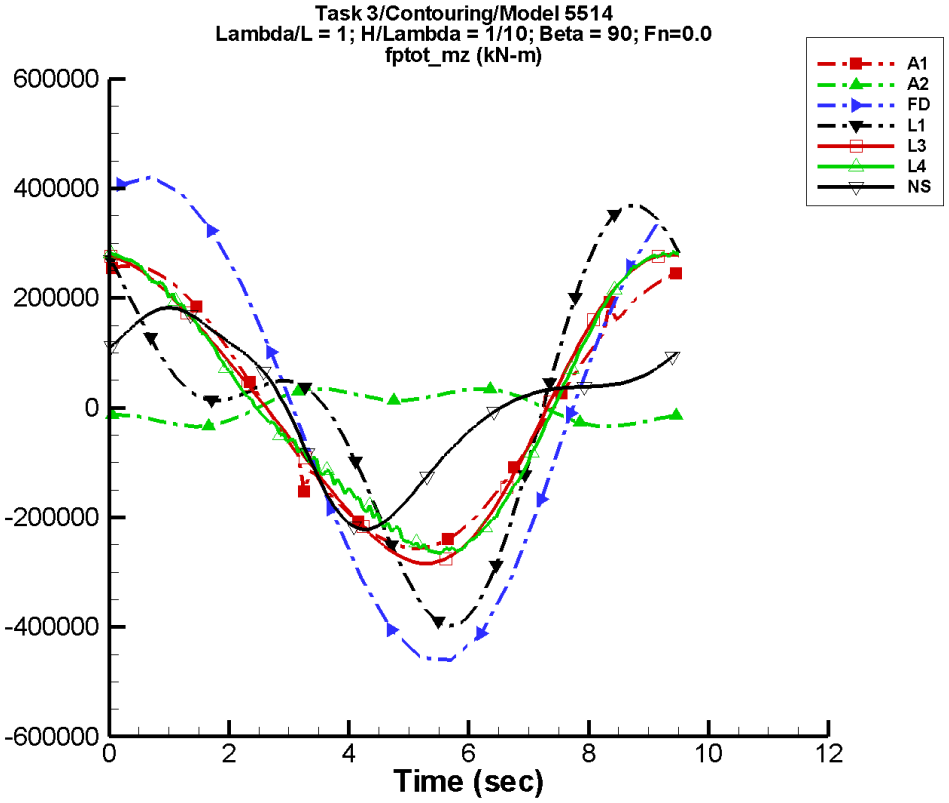
Figure J–25. Time history of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–49. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	0.593	172.	-131	1.42	124
A2	-421.	1.45E+03	114	860.	-77
FD	3.14E-04	5.46E-04	124	5.45E-04	-70
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	4.37E-02	6.79E-02	131	7.41E-02	167

Table J–50. Minimum and maximum of of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-260.	182.	-191.	180.
A2	-7.63E+04	4.30E+03	-1.02E+04	3.25E+03
FD	-2.88E-03	5.68E-03	-1.15E-03	1.09E-03
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-35.9	36.8	-0.855	0.944



Data identically zero, insufficient, or not available from NFA.

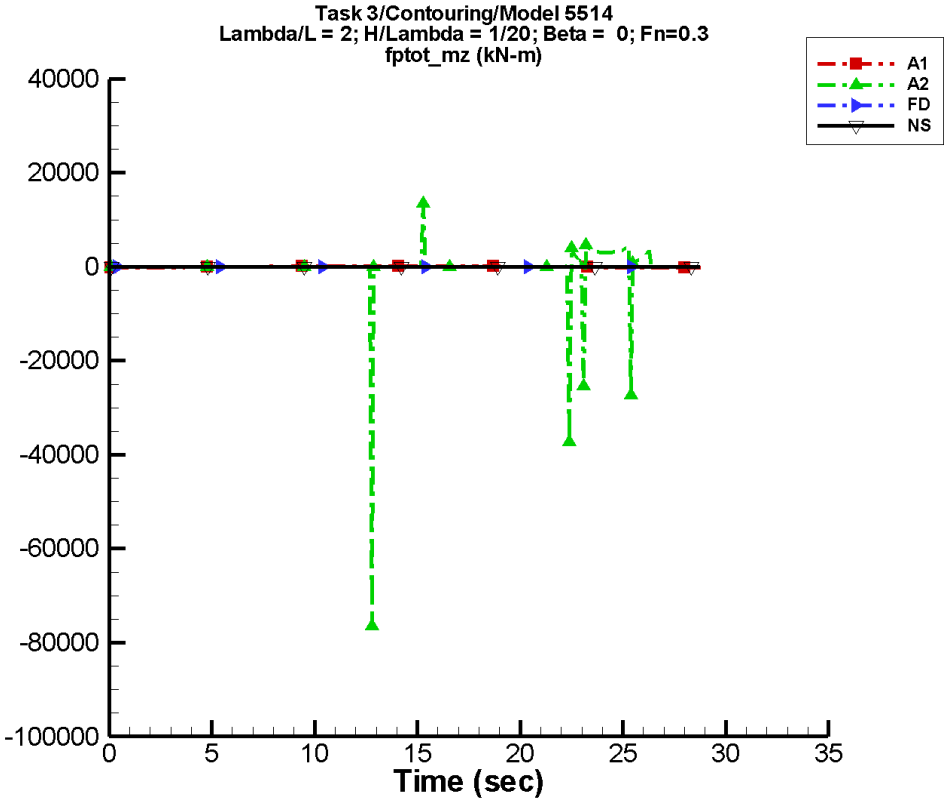
Figure J–26. Time history of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–51. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	71.7	2.58E+05	76	668.	55
A2	-115.	2.97E+04	-101	2.62E+03	99
FD	-6.21E+03	4.45E+05	52	1.97E+04	171
L1	2.18E+03	2.73E+05	75	1.71E+05	164
L3	2.19E+03	2.74E+05	75	3.37E+04	159
L4	3.68E+03	2.62E+05	74	4.41E+04	129
NF	—	—	—	—	—
NS	6.52E+03	1.49E+05	82	7.35E+04	-41

Table J–52. Minimum and maximum of of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-2.56E+05	2.59E+05	-2.53E+05	2.57E+05
A2	-3.42E+04	3.41E+04	-3.26E+04	3.26E+04
FD	-4.60E+05	4.21E+05	-3.24E+05	4.14E+05
L1	-3.98E+05	3.69E+05	-3.94E+05	3.66E+05
L3	-2.84E+05	2.79E+05	-2.83E+05	2.78E+05
L4	-2.65E+05	2.85E+05	-2.61E+05	2.81E+05
NF	—	—	—	—
NS	-2.22E+05	1.83E+05	-2.20E+05	1.81E+05



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

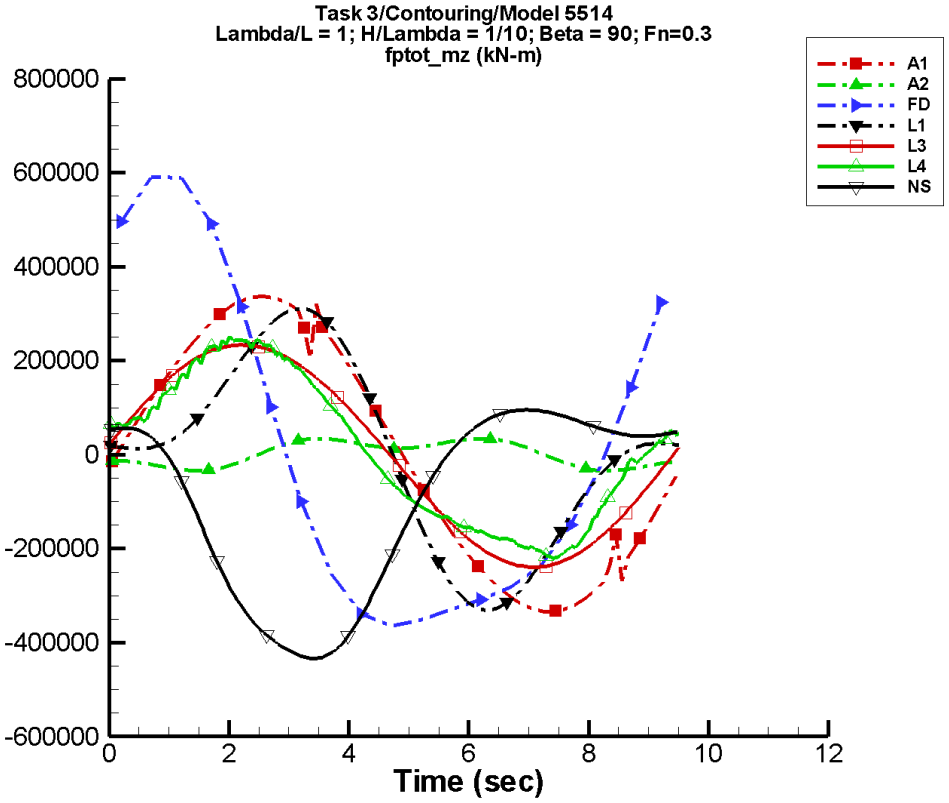
Figure J–27. Time history of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–53. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	0.403	154.	-85	0.600	100
A2	-289.	734.	132	110.	15
FD	-7.84E-05	8.76E-04	-81	9.61E-04	5
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-4.74E-03	4.80E-02	84	0.183	-138

Table J–54. Minimum and maximum of of M_z^{ptot} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-512.	519.	-160.	164.
A2	-7.64E+04	1.35E+04	-1.02E+04	3.41E+03
FD	-7.19E-03	9.45E-03	-1.89E-03	2.22E-03
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-18.9	19.6	-1.29	1.42



Data identically zero, insufficient, or not available from NFA.

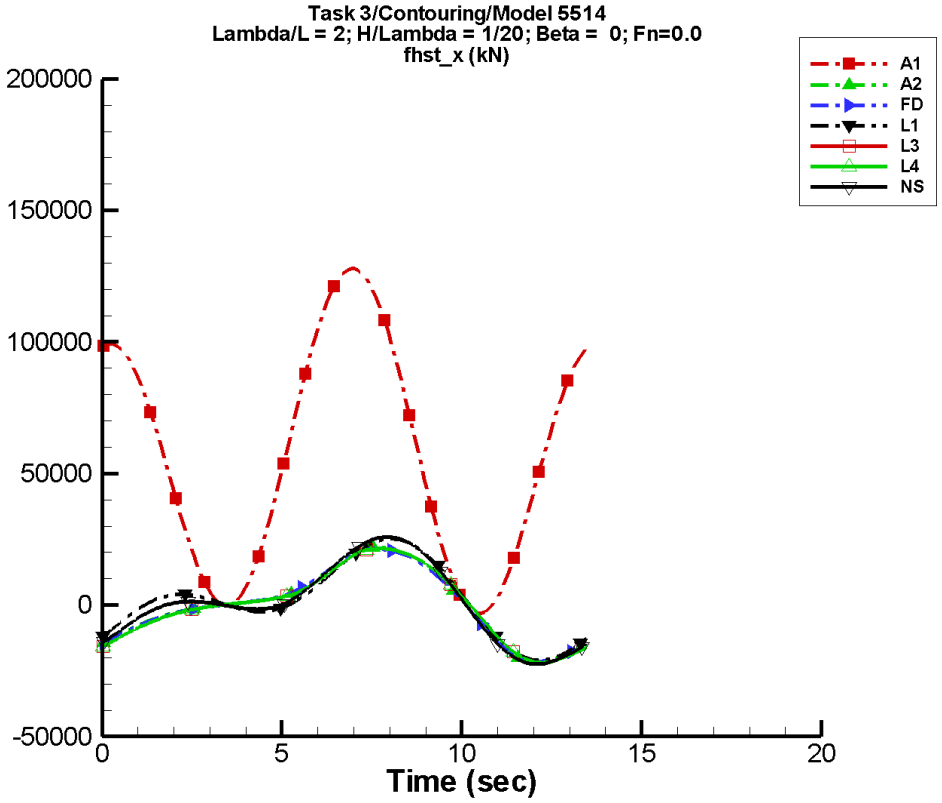
Figure J–28. Time history of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–55. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-270.	3.31E+05	-10	301.	-92
A2	-115.	2.97E+04	-101	2.62E+03	99
FD	1.78E+04	4.69E+05	45	1.20E+05	-20
L1	-147.	2.36E+05	-4	1.34E+05	163
L3	-135.	2.36E+05	-3	4.96E+03	27
L4	6.62E+03	2.12E+05	4	1.79E+04	-132
NF	—	—	—	—	—
NS	-9.96E+04	2.52E+05	148	9.75E+04	18

Table J–56. Minimum and maximum of of M_z^{ptot} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-3.34E+05	3.37E+05	-3.31E+05	3.32E+05
A2	-3.42E+04	3.41E+04	-3.26E+04	3.26E+04
FD	-3.64E+05	5.94E+05	-3.15E+05	5.29E+05
L1	-3.31E+05	3.11E+05	-3.28E+05	3.08E+05
L3	-2.39E+05	2.34E+05	-2.38E+05	2.33E+05
L4	-2.20E+05	2.51E+05	-2.13E+05	2.42E+05
NF	—	—	—	—
NS	-4.34E+05	9.55E+04	-4.32E+05	9.49E+04



Data identically zero, insufficient, or not available from NFA.

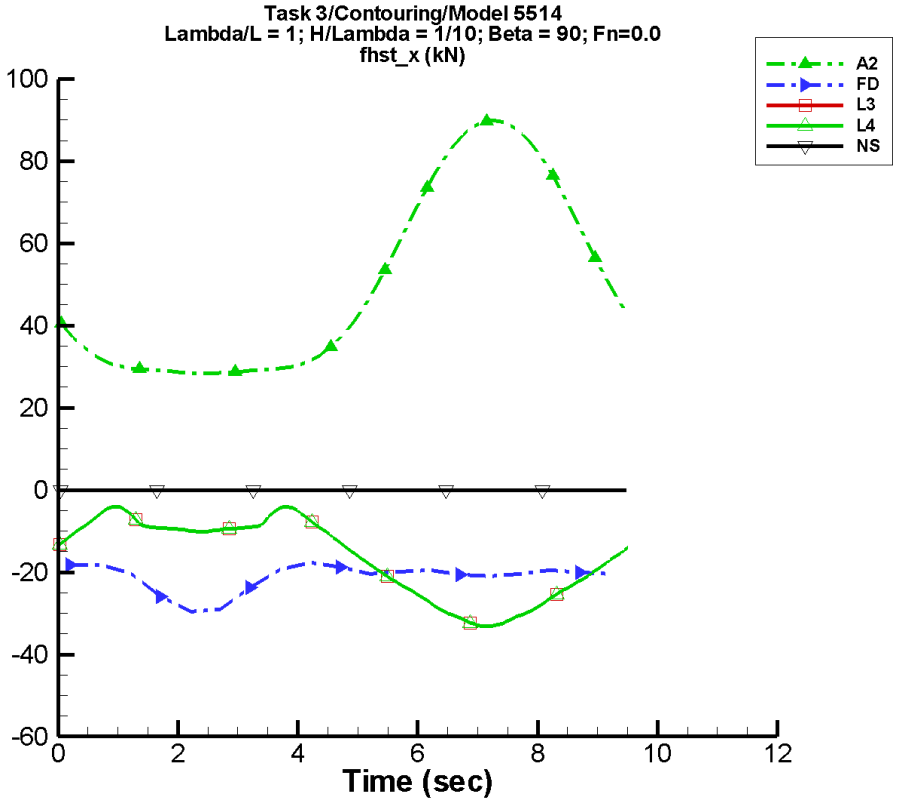
Figure J–29. Time history of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–57. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	5.62E+04	1.45E+04	-94	5.74E+04	69
A2	51.5	1.66E+04	-94	8.17E+03	-3
FD	45.9	1.65E+04	-94	8.03E+03	-4
L1	1.56E+03	1.44E+04	-98	1.21E+04	-9
L3	-20.3	1.66E+04	-97	8.03E+03	-13
L4	-20.3	1.66E+04	-97	8.03E+03	-13
NF	—	—	—	—	—
NS	791.	1.66E+04	-92	1.12E+04	4

Table J–58. Minimum and maximum of of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-3.21E+03	1.28E+05	-1.94E+03	1.27E+05
A2	-2.22E+04	2.17E+04	-2.15E+04	2.16E+04
FD	-2.17E+04	2.16E+04	-1.56E+04	1.59E+04
L1	-2.10E+04	2.52E+04	-2.09E+04	2.51E+04
L3	-2.19E+04	2.15E+04	-2.18E+04	2.14E+04
L4	-2.19E+04	2.15E+04	-2.18E+04	2.14E+04
NF	—	—	—	—
NS	-2.25E+04	2.58E+04	-2.23E+04	2.57E+04



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1 and NFA.

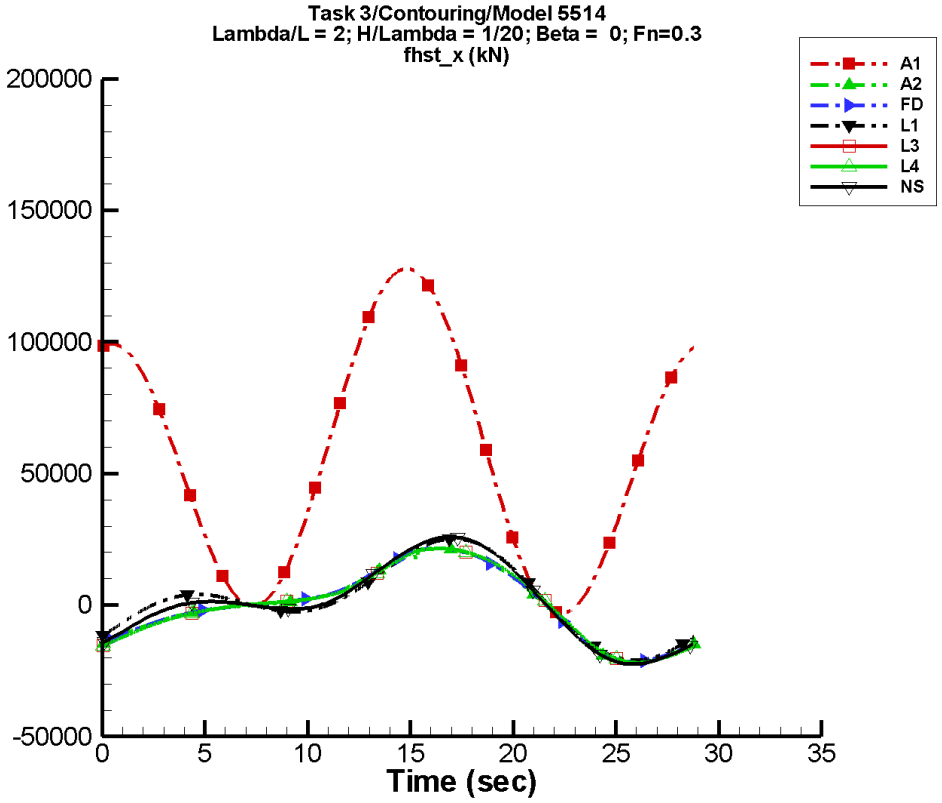
Figure J–30. Time history of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–59. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	49.9	30.0	172	9.77	-106
FD	-21.0	2.49	168	3.78	63
L1	—	—	—	—	—
L3	-16.5	12.3	-7	4.70	73
L4	-16.5	12.3	-7	4.70	73
NF	—	—	—	—	—
NS	4.41E-07	2.20E-03	-90	1.75E-03	-1

Table J–60. Minimum and maximum of of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	28.4	89.9	28.5	89.2
FD	-29.7	-17.7	-23.1	-19.4
L1	—	—	—	—
L3	-33.2	-4.03	-33.0	-4.64
L4	-33.2	-4.03	-33.0	-4.64
NF	—	—	—	—
NS	-3.44E-03	3.44E-03	-3.42E-03	3.42E-03



Data identically zero, insufficient, or not available from NFA.

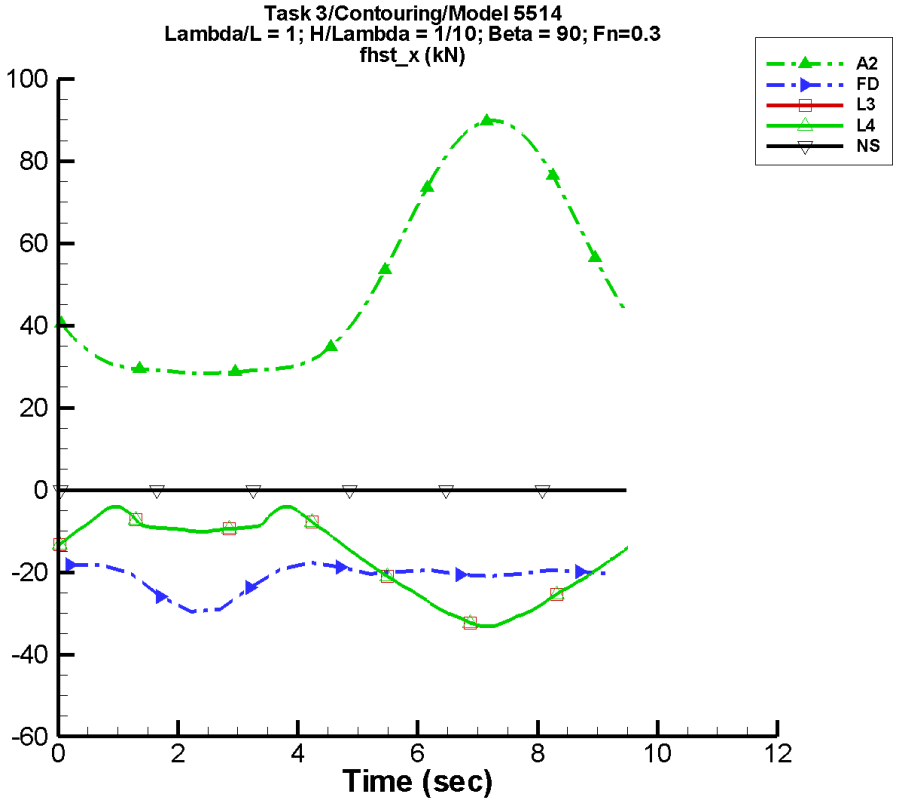
Figure J–31. Time history of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–61. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	5.62E+04	1.44E+04	-91	5.74E+04	76
A2	-216.	1.66E+04	-90	8.21E+03	4
FD	60.3	1.66E+04	-87	7.96E+03	10
L1	1.56E+03	1.44E+04	-92	1.21E+04	4
L3	4.92	1.66E+04	-91	8.12E+03	0
L4	4.92	1.66E+04	-91	8.12E+03	0
NF	—	—	—	—	—
NS	783.	1.66E+04	-91	1.12E+04	5

Table J–62. Minimum and maximum of of F_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-3.23E+03	1.28E+05	-2.95E+03	1.28E+05
A2	-2.24E+04	2.17E+04	-2.21E+04	2.15E+04
FD	-2.17E+04	2.15E+04	-2.01E+04	2.04E+04
L1	-2.10E+04	2.52E+04	-2.10E+04	2.52E+04
L3	-2.19E+04	2.15E+04	-2.19E+04	2.15E+04
L4	-2.19E+04	2.15E+04	-2.19E+04	2.15E+04
NF	—	—	—	—
NS	-2.25E+04	2.58E+04	-2.23E+04	2.57E+04



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1 and NFA.

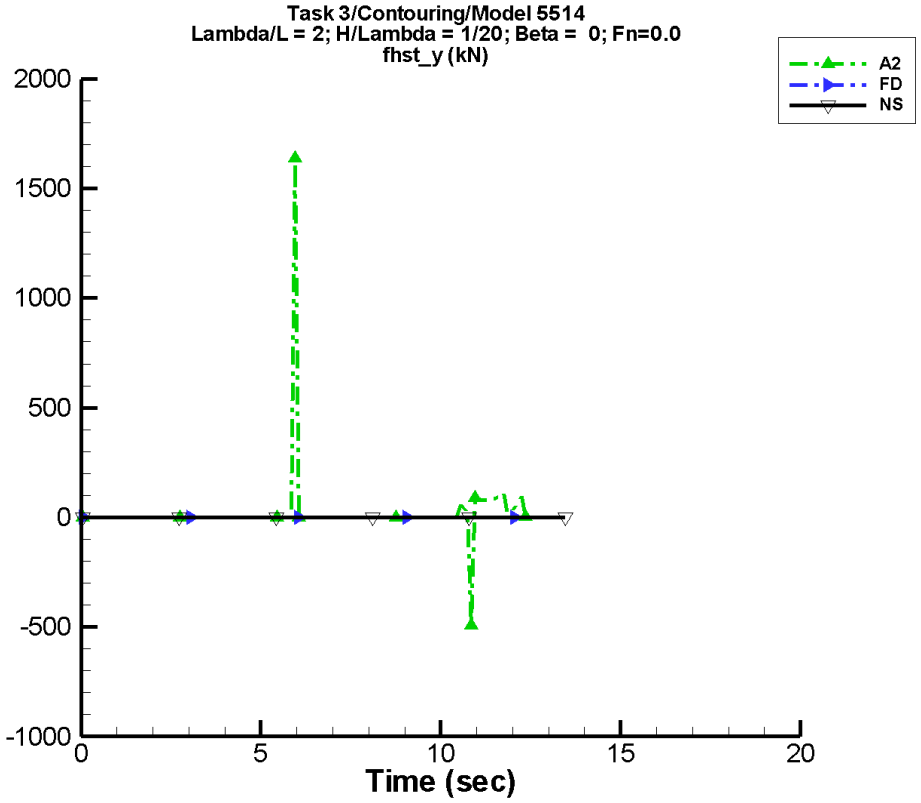
Figure J–32. Time history of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–63. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	49.9	30.0	172	9.77	-106
FD	-21.0	2.49	168	3.78	62
L1	—	—	—	—	—
L3	-16.5	12.3	-7	4.70	73
L4	-16.5	12.3	-7	4.70	73
NF	—	—	—	—	—
NS	3.97E-07	2.20E-03	-90	1.75E-03	-1

Table J–64. Minimum and maximum of of F_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	28.4	89.9	28.5	89.2
FD	-29.7	-17.7	-23.1	-19.4
L1	—	—	—	—
L3	-33.2	-4.02	-33.0	-4.63
L4	-33.2	-4.02	-33.0	-4.63
NF	—	—	—	—
NS	-3.44E-03	3.44E-03	-3.42E-03	3.42E-03



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1, LAMP-3, LAMP-4 and NFA.

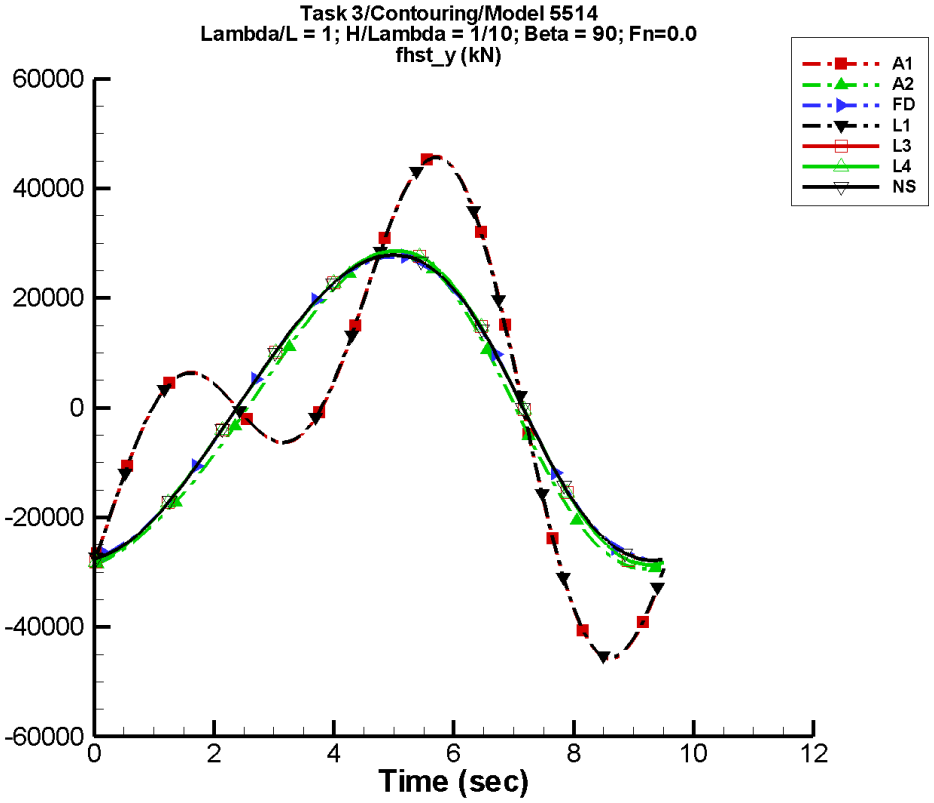
Figure J–33. Time history of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–65. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	18.1	15.3	-78	29.3	137
FD	8.59E-06	3.67E-05	-83	3.43E-05	128
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-5.64E-05	1.87E-03	40	8.48E-04	-157

Table J–66. Minimum and maximum of of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	-492.	1.64E+03	-24.0	219.
FD	-1.86E-04	2.25E-04	-2.90E-05	5.52E-05
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-1.08E-02	9.35E-03	-5.57E-03	4.76E-03



Data identically zero, insufficient, or not available from NFA.

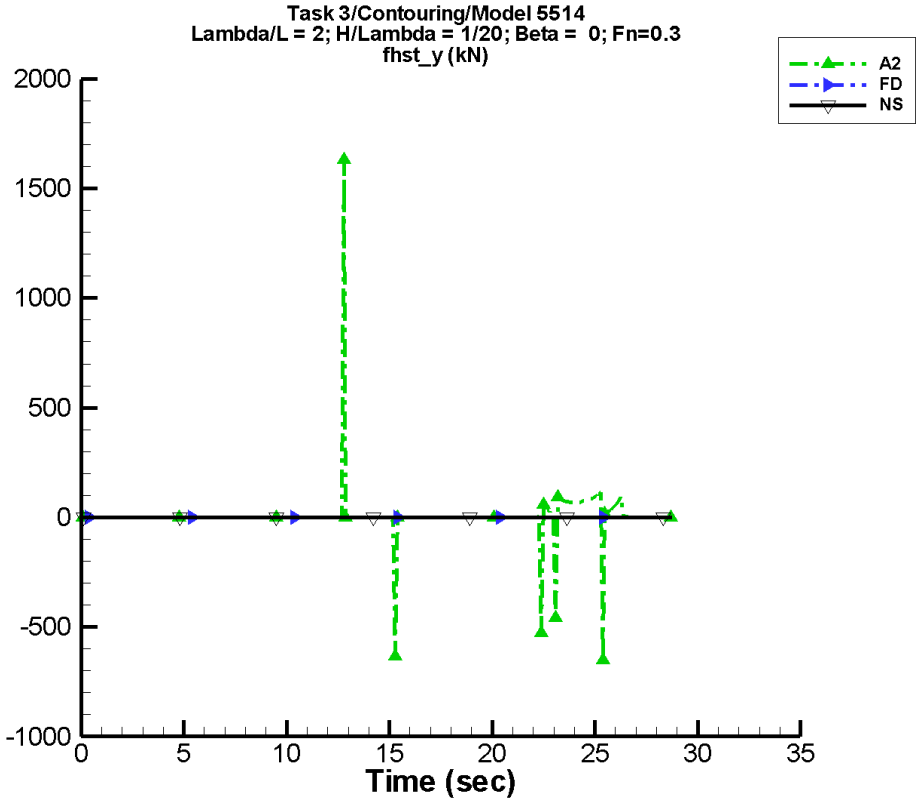
Figure J–34. Time history of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–67. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	18.4	2.86E+04	-94	2.39E+04	-9
A2	-1.58E+03	2.85E+04	-94	2.96E+03	17
FD	11.0	2.80E+04	-104	2.04E+03	-27
L1	13.3	2.85E+04	-98	2.38E+04	-15
L3	12.1	2.84E+04	-98	2.39E+03	-15
L4	12.1	2.84E+04	-98	2.39E+03	-15
NF	—	—	—	—	—
NS	16.0	2.79E+04	-90	2.03E+03	0

Table J–68. Minimum and maximum of of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-4.58E+04	4.58E+04	-4.46E+04	4.45E+04
A2	-2.94E+04	2.85E+04	-2.91E+04	2.81E+04
FD	-2.78E+04	2.76E+04	-2.37E+04	2.01E+04
L1	-4.56E+04	4.56E+04	-4.52E+04	4.52E+04
L3	-2.87E+04	2.87E+04	-2.85E+04	2.85E+04
L4	-2.87E+04	2.87E+04	-2.85E+04	2.85E+04
NF	—	—	—	—
NS	-2.78E+04	2.78E+04	-2.78E+04	2.78E+04



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1, LAMP-3, LAMP-4 and NFA.

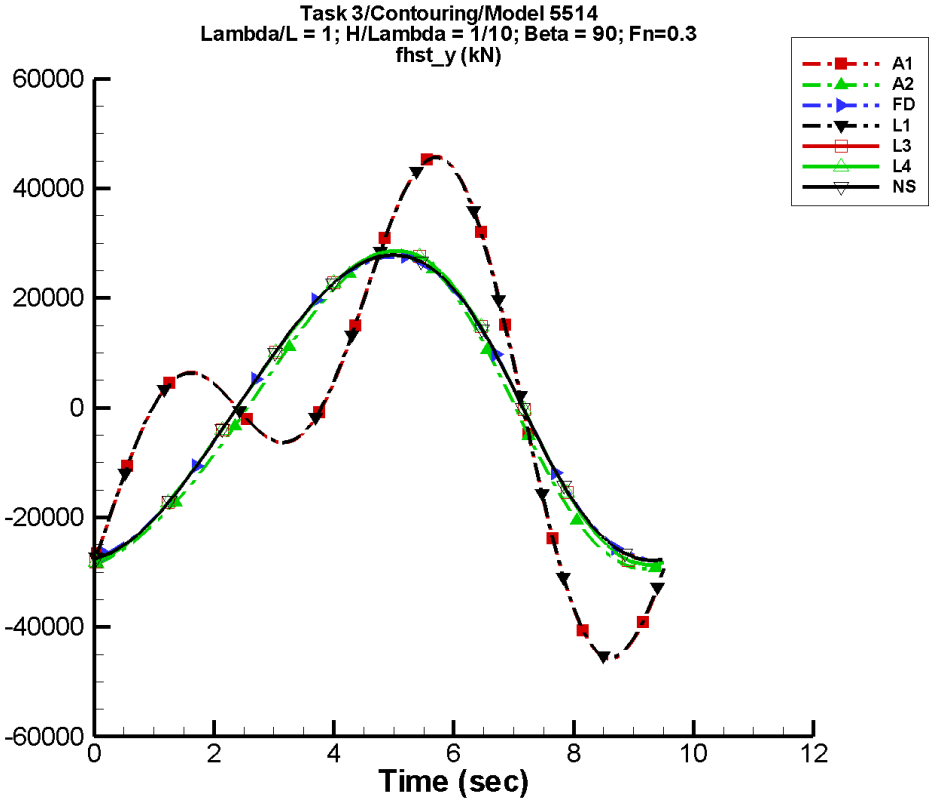
Figure J–35. Time history of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–69. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	4.85	2.12	-147	17.2	146
FD	-5.31E-06	7.39E-06	-112	1.81E-05	63
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-7.33E-04	2.10E-03	3	4.94E-04	118

Table J–70. Minimum and maximum of of F_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	-848.	1.63E+03	-113.	216.
FD	-2.12E-04	2.19E-04	-3.99E-05	3.64E-05
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-1.15E-02	9.12E-03	-4.36E-03	2.31E-03



Data identically zero, insufficient, or not available from NFA.

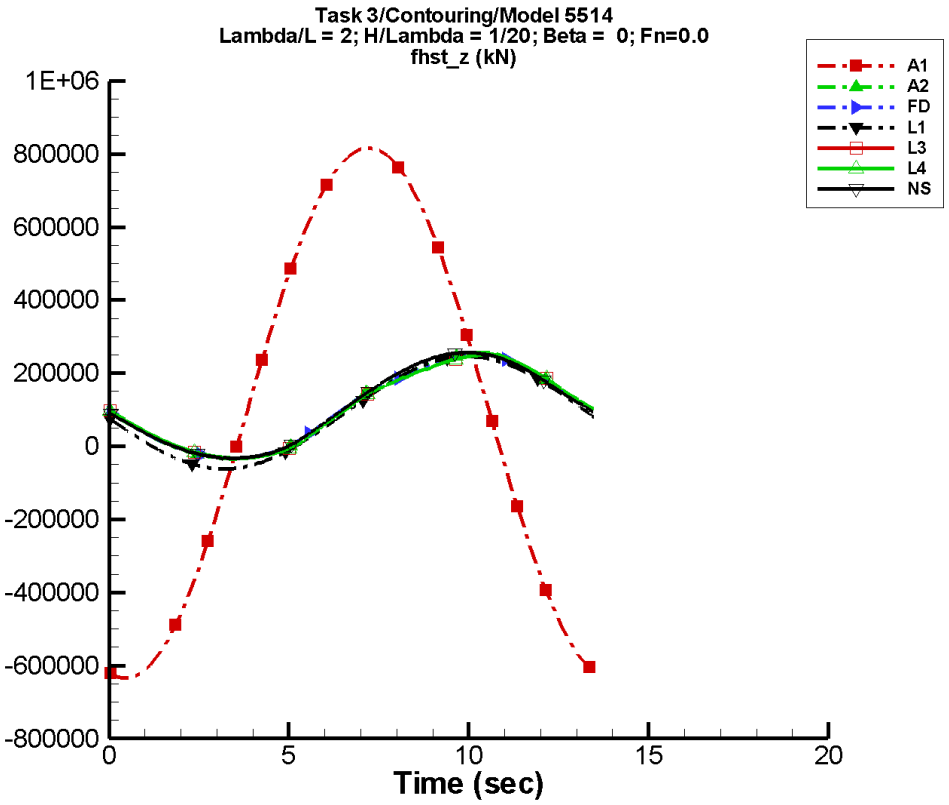
Figure J–36. Time history of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–71. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	18.4	2.86E+04	-94	2.39E+04	-9
A2	-1.58E+03	2.85E+04	-94	2.96E+03	17
FD	11.0	2.80E+04	-104	2.04E+03	-27
L1	13.3	2.85E+04	-98	2.38E+04	-15
L3	12.1	2.84E+04	-98	2.39E+03	-15
L4	12.1	2.84E+04	-98	2.39E+03	-15
NF	—	—	—	—	—
NS	15.5	2.79E+04	-90	2.03E+03	0

Table J–72. Minimum and maximum of of F_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-4.58E+04	4.58E+04	-4.46E+04	4.45E+04
A2	-2.94E+04	2.85E+04	-2.91E+04	2.81E+04
FD	-2.78E+04	2.76E+04	-2.37E+04	2.01E+04
L1	-4.56E+04	4.56E+04	-4.52E+04	4.52E+04
L3	-2.87E+04	2.87E+04	-2.85E+04	2.85E+04
L4	-2.87E+04	2.87E+04	-2.85E+04	2.85E+04
NF	—	—	—	—
NS	-2.78E+04	2.78E+04	-2.78E+04	2.78E+04



Data identically zero, insufficient, or not available from NFA.

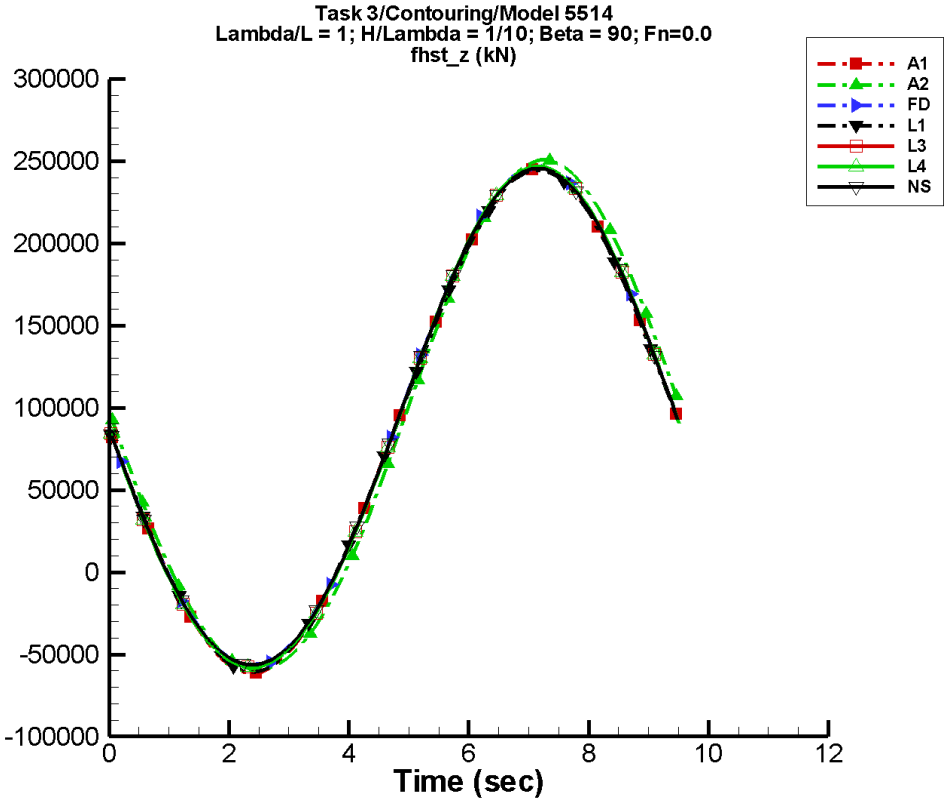
Figure J–37. Time history of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–73. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	9.19E+04	7.27E+05	-107	1.01E+03	-170
A2	1.06E+05	1.43E+05	178	2.72E+03	-90
FD	1.05E+05	1.40E+05	178	1.92E+03	-90
L1	9.12E+04	1.53E+05	179	529.	-110
L3	1.05E+05	1.41E+05	175	1.80E+03	-45
L4	1.05E+05	1.41E+05	175	1.80E+03	-45
NF	—	—	—	—	—
NS	1.07E+05	1.44E+05	-176	6.46E+03	-34

Table J–74. Minimum and maximum of of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-6.34E+05	8.16E+05	-6.30E+05	8.12E+05
A2	-3.41E+04	2.57E+05	-3.40E+04	2.56E+05
FD	-3.26E+04	2.52E+05	-1.35E+04	2.27E+05
L1	-6.21E+04	2.46E+05	-6.18E+04	2.45E+05
L3	-3.25E+04	2.52E+05	-3.23E+04	2.51E+05
L4	-3.25E+04	2.52E+05	-3.23E+04	2.51E+05
NF	—	—	—	—
NS	-3.43E+04	2.56E+05	-3.29E+04	2.56E+05



Data identically zero, insufficient, or not available from NFA.

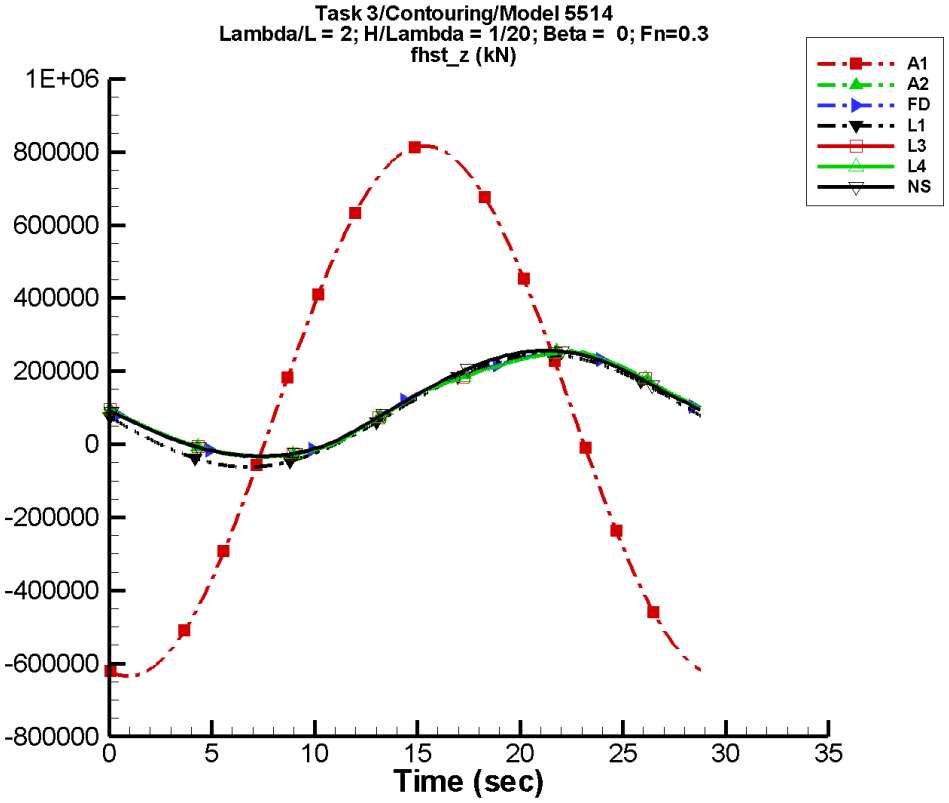
Figure J–38. Time history of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–75. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	8.99E+04	1.52E+05	176	2.04E+03	-98
A2	9.18E+04	1.55E+05	172	3.84E+03	-104
FD	9.12E+04	1.53E+05	166	3.43E+03	-118
L1	8.96E+04	1.51E+05	172	1.84E+03	-104
L3	9.10E+04	1.52E+05	172	3.44E+03	-106
L4	9.10E+04	1.52E+05	172	3.44E+03	-106
NF	—	—	—	—	—
NS	9.12E+04	1.51E+05	180	3.37E+03	-92

Table J–76. Minimum and maximum of of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-6.15E+04	2.45E+05	-5.98E+04	2.44E+05
A2	-5.94E+04	2.51E+05	-5.78E+04	2.49E+05
FD	-5.70E+04	2.47E+05	-2.11E+04	2.02E+05
L1	-6.08E+04	2.44E+05	-6.02E+04	2.44E+05
L3	-5.79E+04	2.47E+05	-5.73E+04	2.46E+05
L4	-5.79E+04	2.47E+05	-5.73E+04	2.46E+05
NF	—	—	—	—
NS	-5.63E+04	2.45E+05	-5.65E+04	2.45E+05



Data identically zero, insufficient, or not available from NFA.

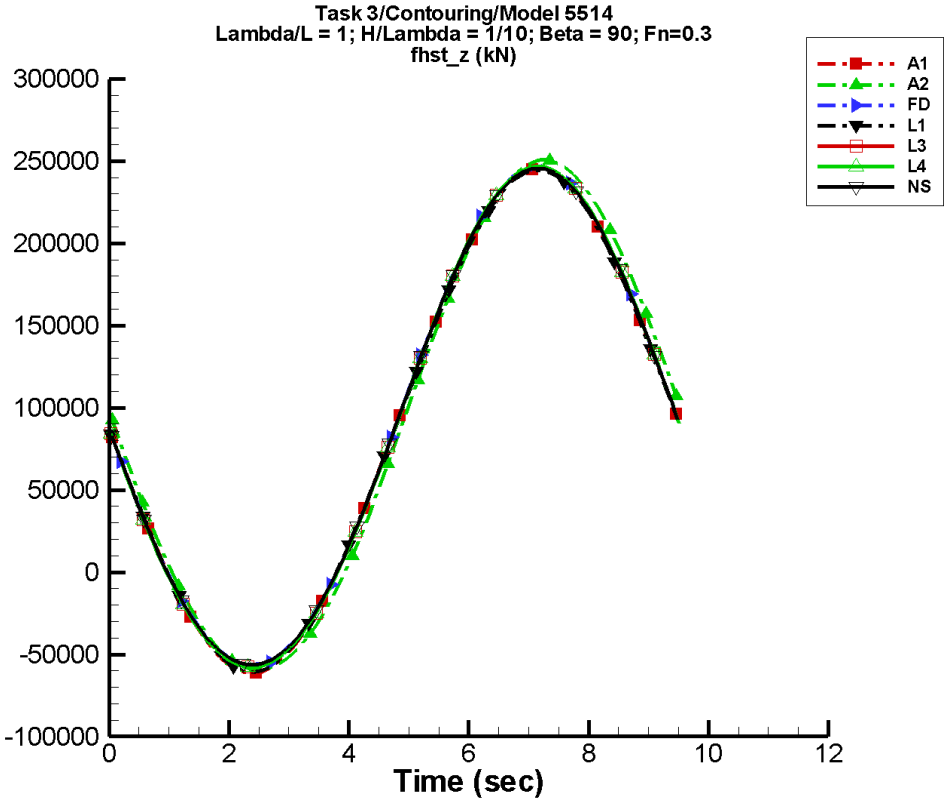
Figure J–39. Time history of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–77. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	9.15E+04	7.27E+05	-103	388.	-144
A2	1.06E+05	1.43E+05	-179	2.81E+03	-81
FD	1.05E+05	1.41E+05	-175	2.33E+03	-53
L1	9.12E+04	1.53E+05	-174	539.	-91
L3	1.05E+05	1.40E+05	-179	1.51E+03	-87
L4	1.05E+05	1.40E+05	-179	1.51E+03	-87
NF	—	—	—	—	—
NS	1.07E+05	1.44E+05	-176	6.55E+03	-33

Table J–78. Minimum and maximum of of F_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-6.34E+05	8.16E+05	-6.33E+05	8.15E+05
A2	-3.42E+04	2.58E+05	-3.40E+04	2.57E+05
FD	-3.27E+04	2.52E+05	-2.94E+04	2.45E+05
L1	-6.21E+04	2.46E+05	-6.20E+04	2.46E+05
L3	-3.25E+04	2.52E+05	-3.24E+04	2.52E+05
L4	-3.25E+04	2.52E+05	-3.24E+04	2.52E+05
NF	—	—	—	—
NS	-3.43E+04	2.56E+05	-3.29E+04	2.56E+05



Data identically zero, insufficient, or not available from NFA.

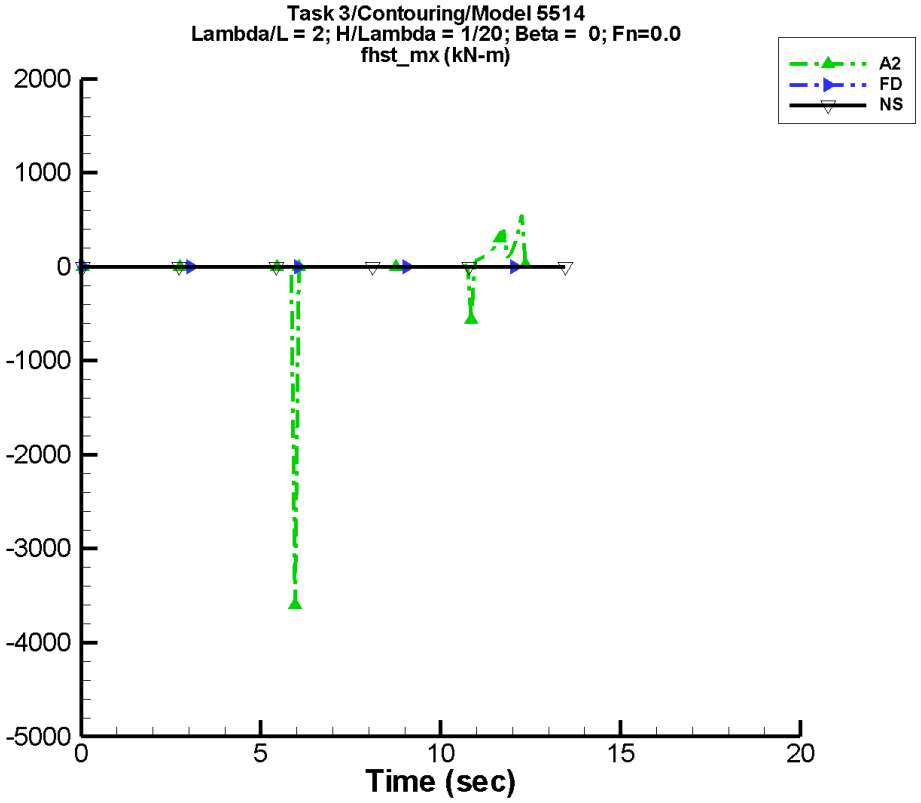
Figure J–40. Time history of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–79. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	8.99E+04	1.52E+05	176	2.04E+03	-98
A2	9.18E+04	1.55E+05	172	3.84E+03	-104
FD	9.12E+04	1.53E+05	166	3.43E+03	-118
L1	8.96E+04	1.51E+05	172	1.84E+03	-104
L3	9.10E+04	1.52E+05	172	3.44E+03	-106
L4	9.10E+04	1.52E+05	172	3.44E+03	-106
NF	—	—	—	—	—
NS	9.12E+04	1.51E+05	180	3.37E+03	-91

Table J–80. Minimum and maximum of of F_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-6.15E+04	2.45E+05	-5.98E+04	2.44E+05
A2	-5.94E+04	2.51E+05	-5.78E+04	2.49E+05
FD	-5.70E+04	2.47E+05	-2.11E+04	2.02E+05
L1	-6.08E+04	2.44E+05	-6.02E+04	2.44E+05
L3	-5.79E+04	2.47E+05	-5.73E+04	2.46E+05
L4	-5.79E+04	2.47E+05	-5.73E+04	2.46E+05
NF	—	—	—	—
NS	-5.63E+04	2.45E+05	-5.65E+04	2.45E+05



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1, LAMP-3, LAMP-4 and NFA.

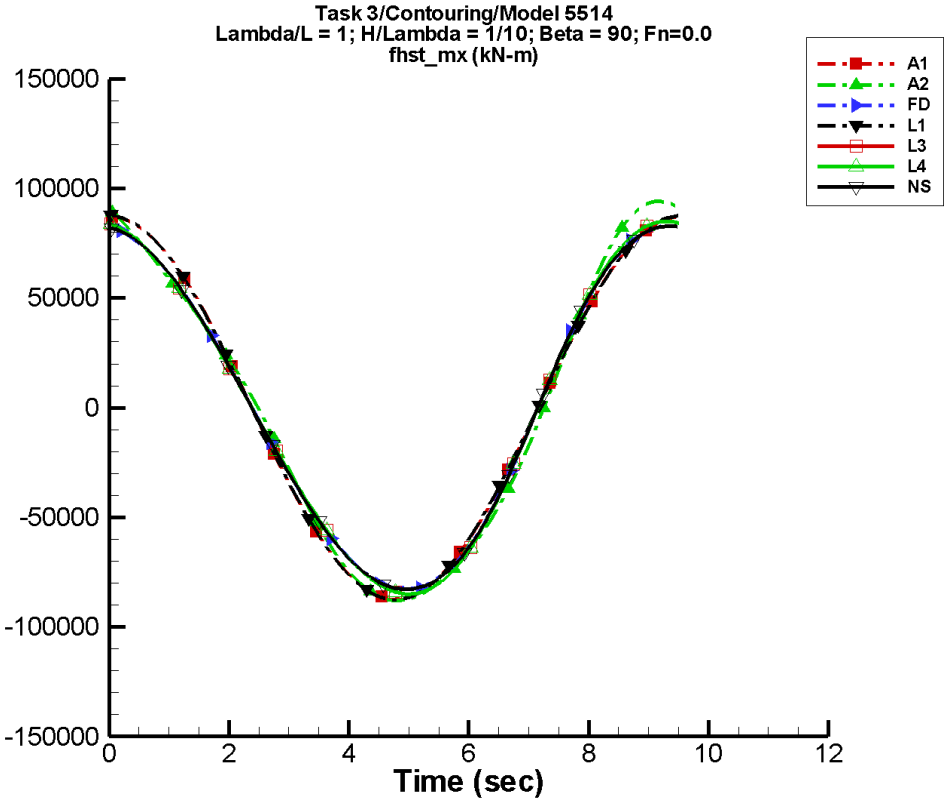
Figure J–41. Time history of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–81. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	—	—	—	—	—
A2	-10.1	86.4	116	36.9	-104
FD	7.76E-05	1.58E-04	-157	4.52E-05	-20
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	3.58E-03	6.72E-03	163	1.01E-02	-157

Table J–82. Minimum and maximum of of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	—	—	—	—
A2	-3.60E+03	554.	-480.	260.
FD	-6.34E-04	9.41E-04	-1.13E-04	2.34E-04
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-8.72E-02	7.87E-02	-3.86E-02	6.31E-02



Data identically zero, insufficient, or not available from NFA.

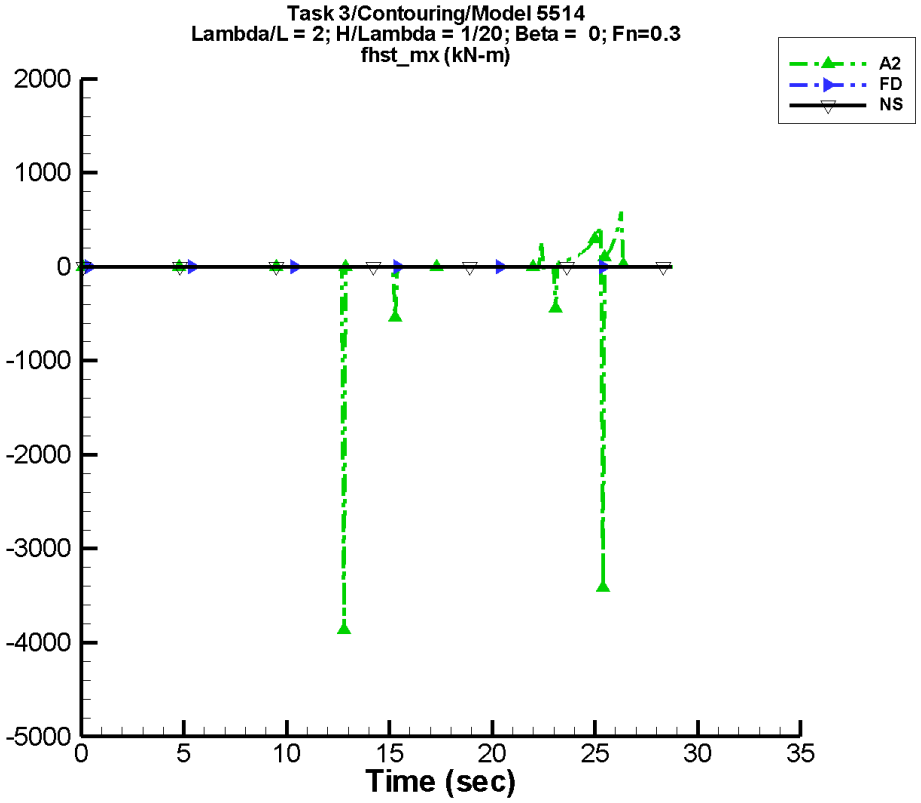
Figure J–42. Time history of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–83. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-73.4	8.72E+04	86	100.	29
A2	-245.	8.81E+04	85	7.88E+03	166
FD	-34.5	8.39E+04	76	5.26E+03	153
L1	10.9	8.72E+04	82	62.5	146
L3	-29.1	8.46E+04	82	6.25E+03	165
L4	-29.1	8.46E+04	82	6.25E+03	165
NF	—	—	—	—	—
NS	-46.2	8.34E+04	90	5.14E+03	-179

Table J–84. Minimum and maximum of of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-8.72E+04	8.72E+04	-8.62E+04	8.70E+04
A2	-8.79E+04	9.42E+04	-8.70E+04	9.27E+04
FD	-8.23E+04	8.30E+04	-6.04E+04	7.13E+04
L1	-8.75E+04	8.75E+04	-8.72E+04	8.80E+04
L3	-8.50E+04	8.50E+04	-8.47E+04	8.47E+04
L4	-8.50E+04	8.50E+04	-8.47E+04	8.47E+04
NF	—	—	—	—
NS	-8.29E+04	8.28E+04	-8.27E+04	8.26E+04



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1, LAMP-3, LAMP-4 and NFA.

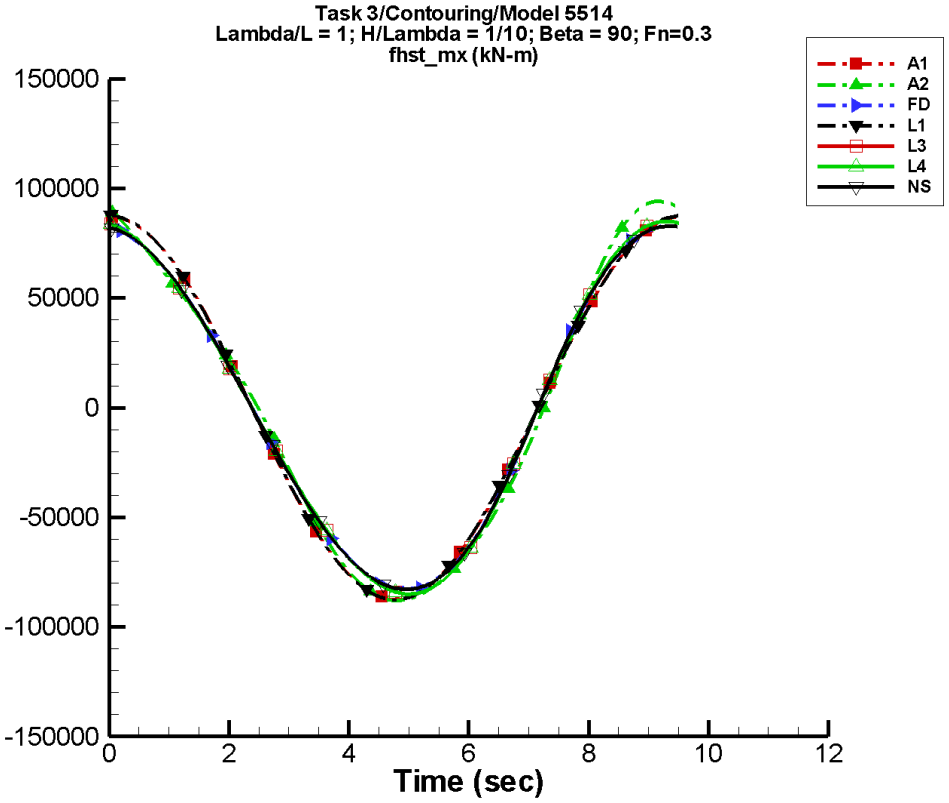
Figure J–43. Time history of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–85. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	—	—	—	—	—
A2	-22.8	68.2	143	12.0	99
FD	-3.58E-05	4.35E-05	-63	5.40E-05	50
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	2.47E-03	4.94E-03	-156	1.90E-03	-148

Table J–86. Minimum and maximum of of M_x^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	—	—	—	—
A2	-7.08E+03	585.	-944.	294.
FD	-1.30E-03	1.05E-03	-2.17E-04	1.94E-04
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-5.74E-02	8.34E-02	-9.53E-03	1.79E-02



Data identically zero, insufficient, or not available from NFA.

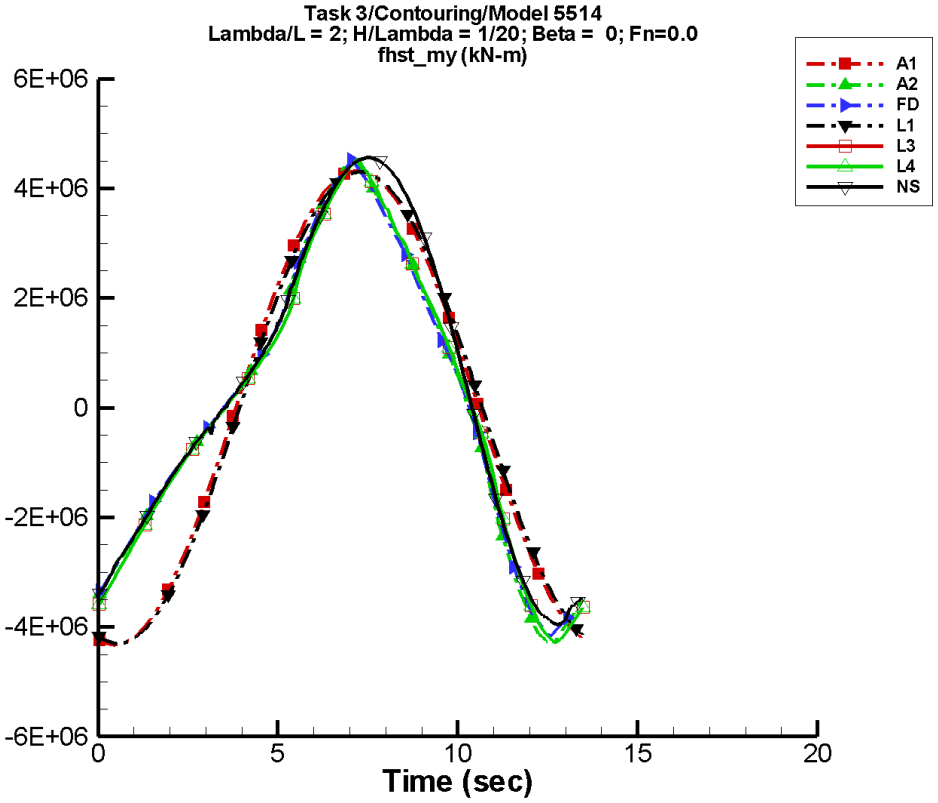
Figure J–44. Time history of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–87. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-73.4	8.72E+04	86	100.	29
A2	-245.	8.81E+04	85	7.88E+03	166
FD	-34.5	8.39E+04	76	5.26E+03	153
L1	10.9	8.72E+04	82	62.5	146
L3	-29.1	8.46E+04	82	6.25E+03	165
L4	-29.1	8.46E+04	82	6.25E+03	165
NF	—	—	—	—	—
NS	-43.8	8.34E+04	90	5.14E+03	-179

Table J–88. Minimum and maximum of of M_x^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-8.72E+04	8.72E+04	-8.62E+04	8.70E+04
A2	-8.79E+04	9.42E+04	-8.70E+04	9.27E+04
FD	-8.23E+04	8.30E+04	-6.04E+04	7.13E+04
L1	-8.75E+04	8.75E+04	-8.72E+04	8.80E+04
L3	-8.50E+04	8.50E+04	-8.47E+04	8.47E+04
L4	-8.50E+04	8.50E+04	-8.47E+04	8.47E+04
NF	—	—	—	—
NS	-8.29E+04	8.28E+04	-8.27E+04	8.26E+04



Data identically zero, insufficient, or not available from NFA.

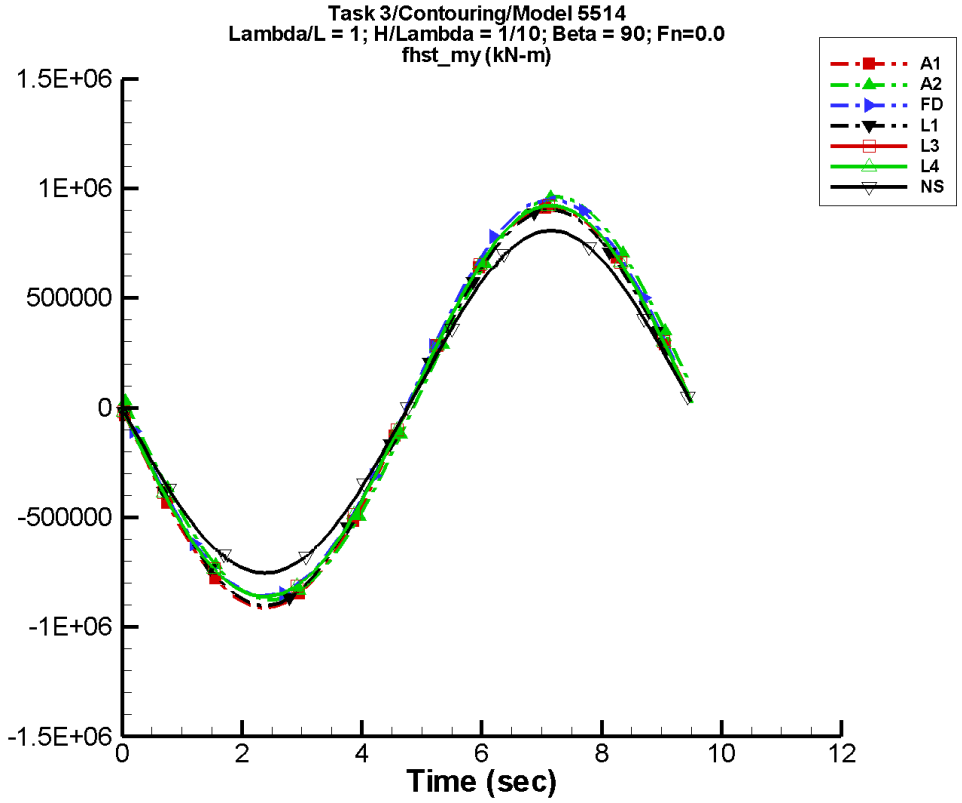
Figure J–45. Time history of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–89. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	3.39E+03	4.32E+06	-107	4.91E+03	-179
A2	8.85E+04	3.67E+06	-95	8.38E+05	1
FD	1.02E+05	3.61E+06	-95	7.91E+05	0
L1	-41.1	4.30E+06	-110	395.	-69
L3	8.70E+04	3.66E+06	-99	8.51E+05	-7
L4	8.70E+04	3.66E+06	-99	8.51E+05	-7
NF	—	—	—	—	—
NS	2.94E+05	3.77E+06	-96	9.91E+05	2

Table J–90. Minimum and maximum of of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-4.32E+06	4.32E+06	-4.30E+06	4.30E+06
A2	-4.30E+06	4.55E+06	-4.19E+06	4.41E+06
FD	-4.18E+06	4.53E+06	-3.05E+06	3.35E+06
L1	-4.30E+06	4.30E+06	-4.29E+06	4.32E+06
L3	-4.28E+06	4.55E+06	-4.23E+06	4.54E+06
L4	-4.28E+06	4.55E+06	-4.23E+06	4.54E+06
NF	—	—	—	—
NS	-3.95E+06	4.56E+06	-3.91E+06	4.55E+06



Data identically zero, insufficient, or not available from NFA.

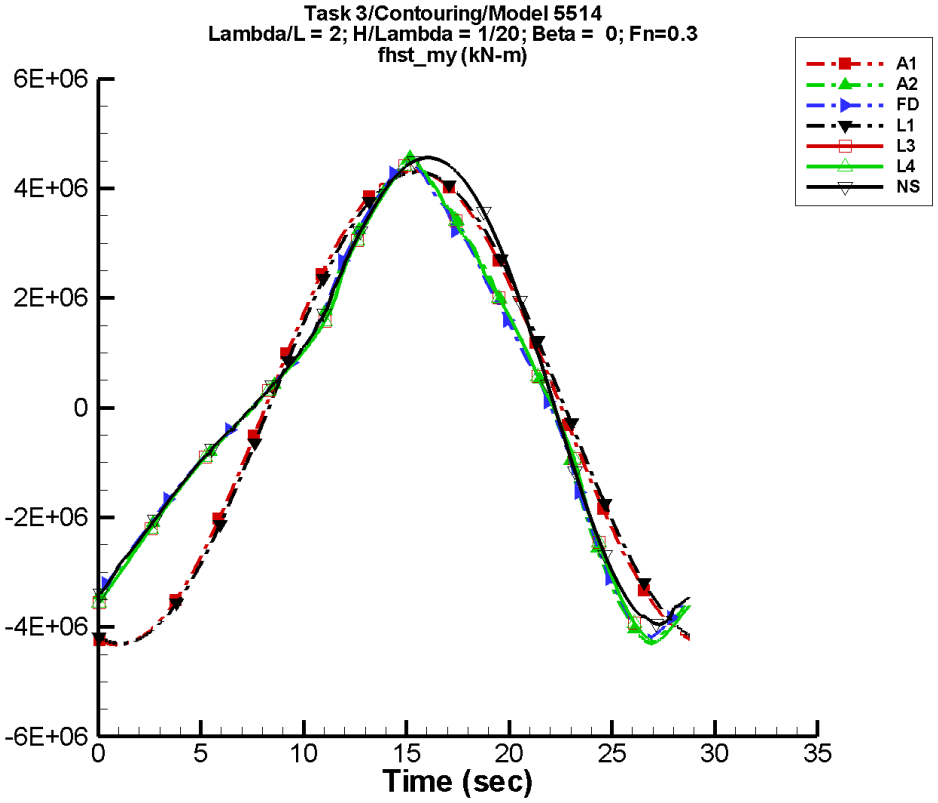
Figure J–46. Time history of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–91. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	580.	9.12E+05	176	898.	152
A2	2.35E+04	9.12E+05	172	1.81E+04	-107
FD	3.15E+04	9.14E+05	166	1.49E+04	-118
L1	415.	8.92E+05	172	2.41E+03	67
L3	1.66E+04	8.94E+05	172	1.33E+04	-106
L4	1.66E+04	8.94E+05	172	1.33E+04	-106
NF	—	—	—	—	—
NS	1.38E+04	7.76E+05	180	1.19E+04	-91

Table J–92. Minimum and maximum of of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-9.12E+05	9.12E+05	-9.02E+05	9.02E+05
A2	-8.77E+05	9.61E+05	-8.67E+05	9.49E+05
FD	-8.61E+05	9.59E+05	-6.42E+05	6.97E+05
L1	-9.03E+05	9.02E+05	-8.99E+05	8.98E+05
L3	-8.61E+05	9.22E+05	-8.58E+05	9.19E+05
L4	-8.61E+05	9.22E+05	-8.58E+05	9.19E+05
NF	—	—	—	—
NS	-7.53E+05	8.07E+05	-7.54E+05	8.05E+05



Data identically zero, insufficient, or not available from NFA.

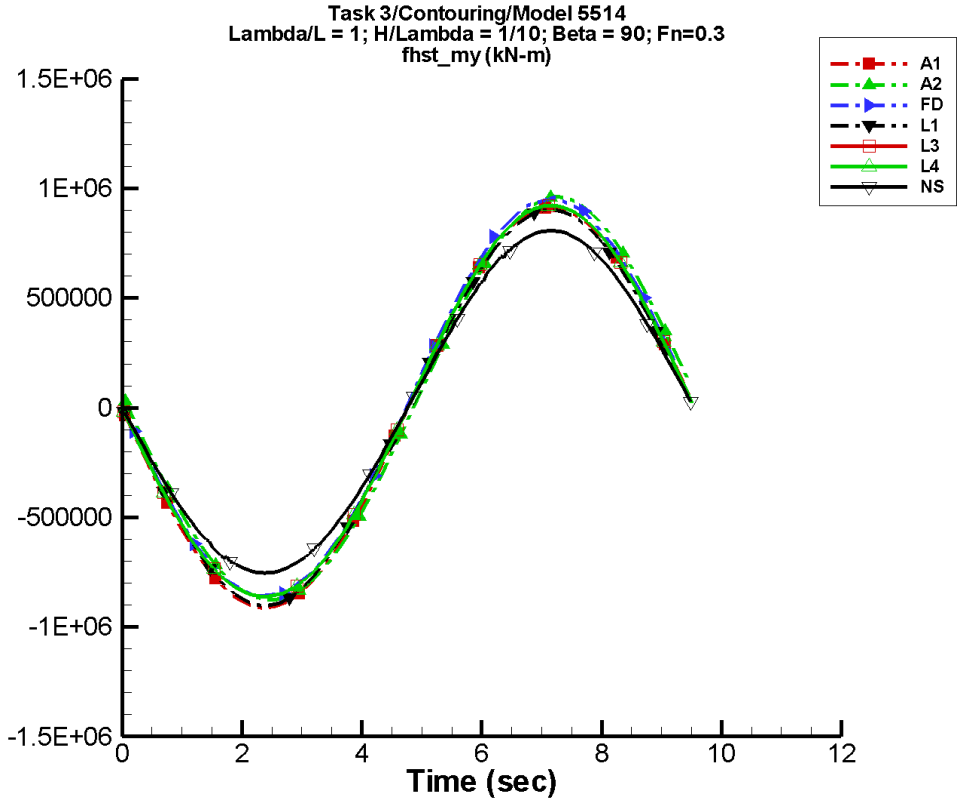
Figure J–47. Time history of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–93. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	727.	4.32E+06	-103	1.03E+03	-167
A2	9.05E+04	3.68E+06	-92	8.44E+05	6
FD	8.07E+04	3.59E+06	-88	8.22E+05	15
L1	-165.	4.30E+06	-104	155.	61
L3	7.11E+04	3.63E+06	-92	7.96E+05	4
L4	7.11E+04	3.63E+06	-92	7.96E+05	4
NF	—	—	—	—	—
NS	2.93E+05	3.77E+06	-95	9.93E+05	3

Table J–94. Minimum and maximum of of M_y^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-4.32E+06	4.32E+06	-4.32E+06	4.32E+06
A2	-4.30E+06	4.57E+06	-4.27E+06	4.50E+06
FD	-4.19E+06	4.47E+06	-3.81E+06	4.08E+06
L1	-4.30E+06	4.30E+06	-4.30E+06	4.30E+06
L3	-4.28E+06	4.55E+06	-4.26E+06	4.51E+06
L4	-4.28E+06	4.55E+06	-4.26E+06	4.51E+06
NF	—	—	—	—
NS	-3.95E+06	4.56E+06	-3.91E+06	4.55E+06



Data identically zero, insufficient, or not available from NFA.

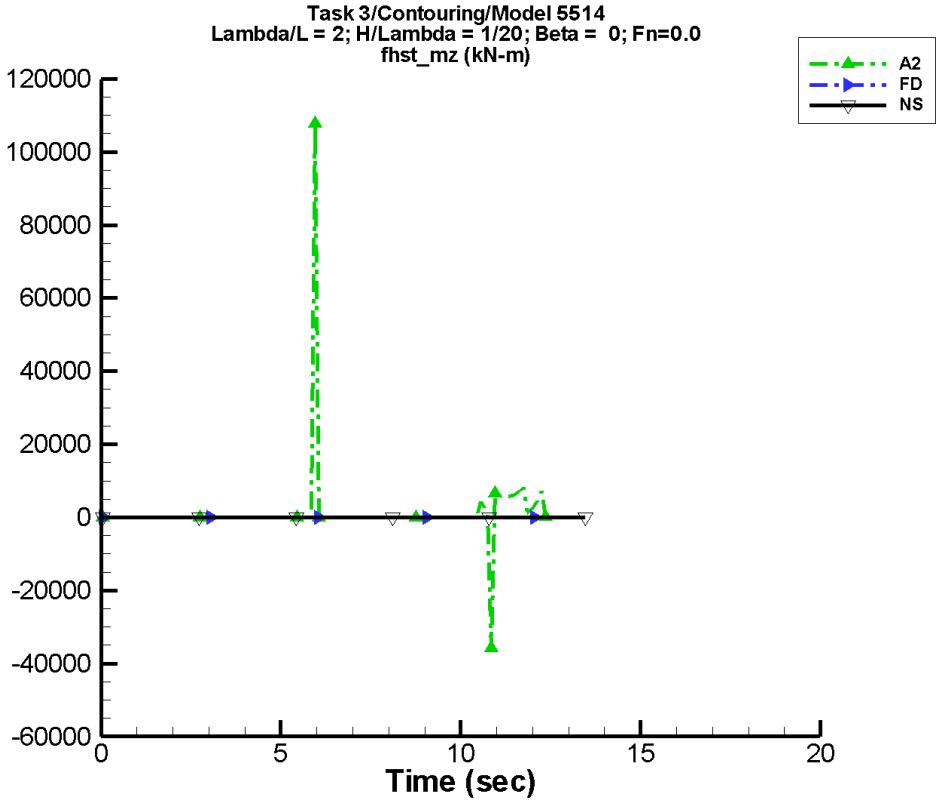
Figure J–48. Time history of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–95. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	580.	9.12E+05	176	898.	152
A2	2.35E+04	9.12E+05	172	1.81E+04	-107
FD	3.15E+04	9.14E+05	166	1.49E+04	-118
L1	415.	8.92E+05	172	2.41E+03	67
L3	1.66E+04	8.94E+05	172	1.33E+04	-106
L4	1.66E+04	8.94E+05	172	1.33E+04	-106
NF	—	—	—	—	—
NS	1.38E+04	7.76E+05	180	1.21E+04	-90

Table J–96. Minimum and maximum of of M_y^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-9.12E+05	9.12E+05	-9.02E+05	9.02E+05
A2	-8.77E+05	9.61E+05	-8.67E+05	9.49E+05
FD	-8.61E+05	9.59E+05	-6.42E+05	6.97E+05
L1	-9.03E+05	9.02E+05	-8.99E+05	8.98E+05
L3	-8.61E+05	9.22E+05	-8.58E+05	9.19E+05
L4	-8.61E+05	9.22E+05	-8.58E+05	9.19E+05
NF	—	—	—	—
NS	-7.53E+05	8.07E+05	-7.54E+05	8.05E+05



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1, LAMP-3, LAMP-4 and NFA.

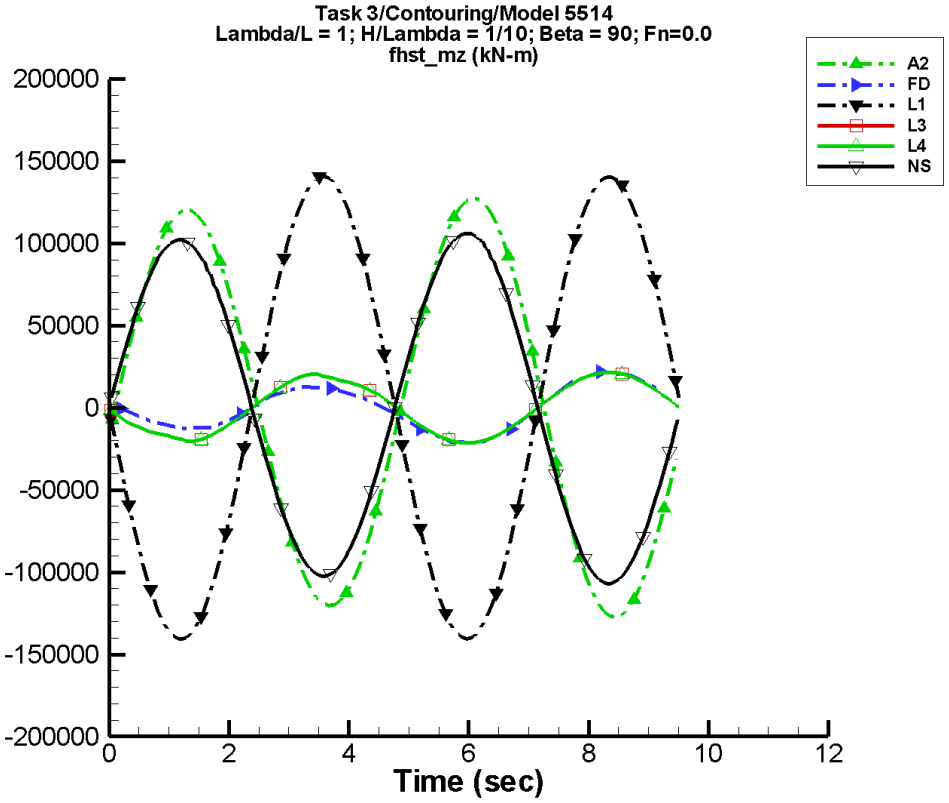
Figure J–49. Time history of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–97. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	—	—	—	—	—
A2	1.23E+03	940.	-80	1.99E+03	138
FD	9.13E-04	6.68E-04	115	2.02E-03	140
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-3.14E-03	0.171	-64	0.114	-88

Table J–98. Minimum and maximum of of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	—	—	—	—
A2	-3.57E+04	1.08E+05	-1.71E+03	1.44E+04
FD	-6.74E-03	8.82E-03	-5.19E-05	3.75E-03
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-1.00	0.622	-0.638	0.501



Data identically zero, insufficient, or not available from AEGIR-1 and NFA.

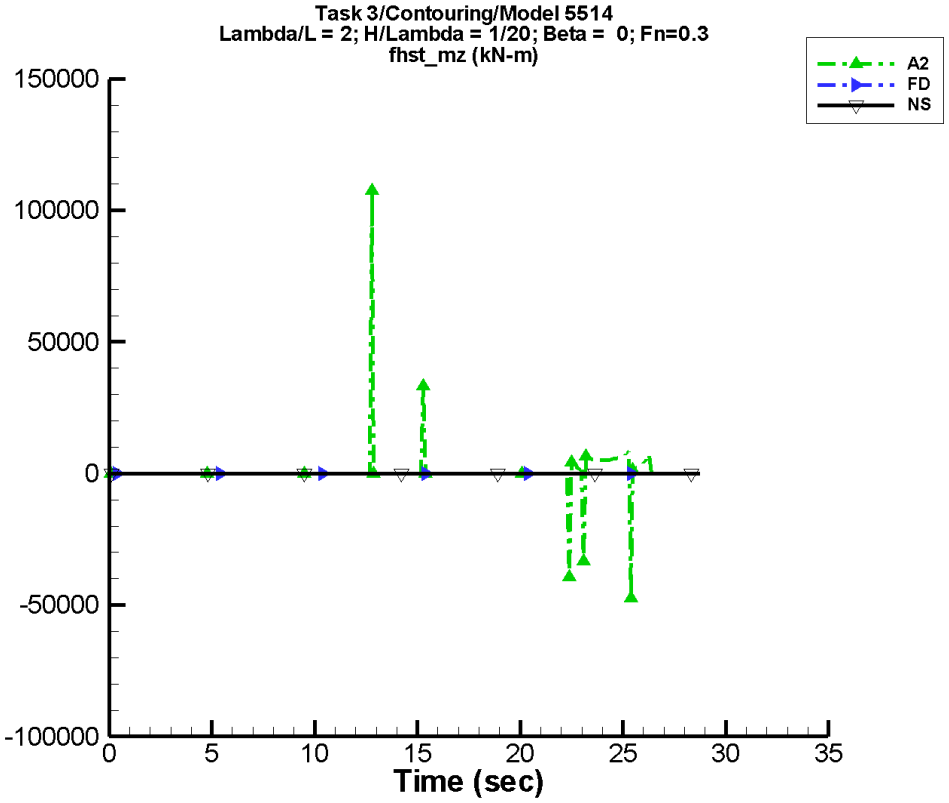
Figure J–50. Time history of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–99. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	—	—	—	—	—
A2	-38.7	2.68E+03	-106	1.24E+05	-16
FD	-48.2	5.28E+03	76	1.73E+04	152
L1	-37.6	65.4	94	1.41E+05	165
L3	-3.37	503.	79	2.05E+04	165
L4	-3.37	503.	79	2.05E+04	165
NF	—	—	—	—	—
NS	-183.	1.69E+03	-94	1.04E+05	0

Table J–100. Minimum and maximum of of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	—	—	—	—
A2	-1.27E+05	1.27E+05	-1.22E+05	1.22E+05
FD	-2.12E+04	2.18E+04	-3.94E+03	5.95E+03
L1	-1.41E+05	1.41E+05	-1.38E+05	1.39E+05
L3	-2.14E+04	2.14E+04	-2.11E+04	2.11E+04
L4	-2.14E+04	2.14E+04	-2.11E+04	2.11E+04
NF	—	—	—	—
NS	-1.07E+05	1.06E+05	-1.06E+05	1.05E+05



Data identically zero, insufficient, or not available from AEGIR-1, LAMP-1, LAMP-3, LAMP-4 and NFA.

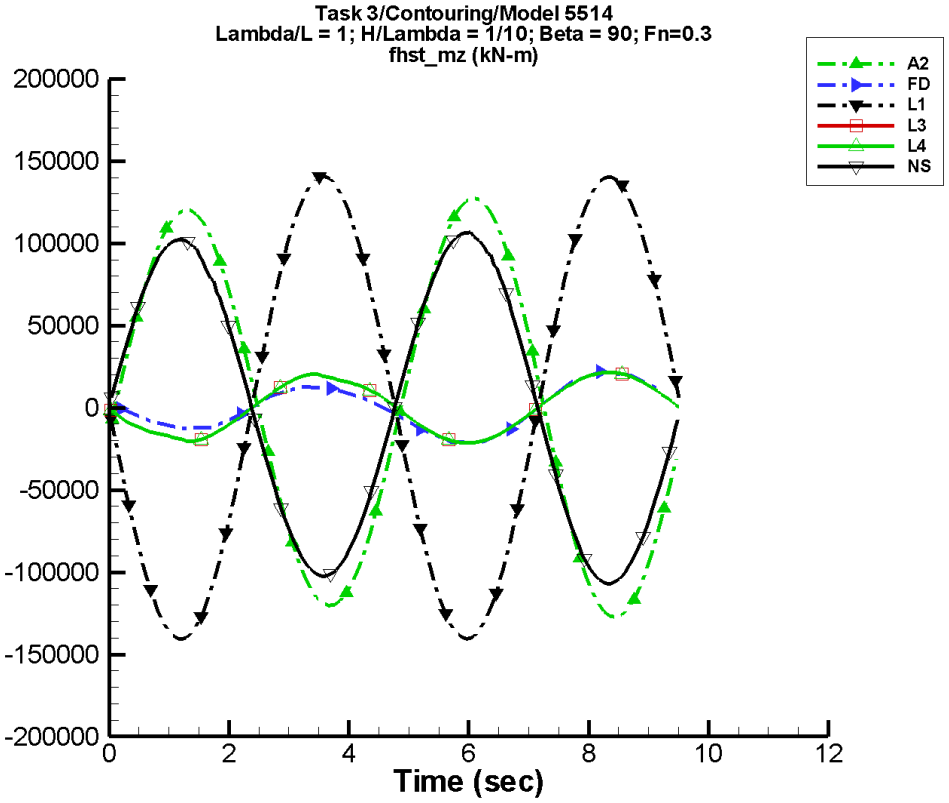
Figure J–51. Time history of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–101. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	—	—	—	—	—
A2	600.	613.	-112	1.31E+03	126
FD	-2.16E-04	8.90E-04	-83	8.11E-04	-42
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	1.18E-02	8.11E-02	-65	3.44E-02	87

Table J–102. Minimum and maximum of of M_z^{hst} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	—	—	—	—
A2	-5.57E+04	1.07E+05	-7.41E+03	1.44E+04
FD	-6.84E-03	6.76E-03	-3.94E-03	1.55E-03
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.901	0.892	-0.245	0.198



Data identically zero, insufficient, or not available from AEGIR-1 and NFA.

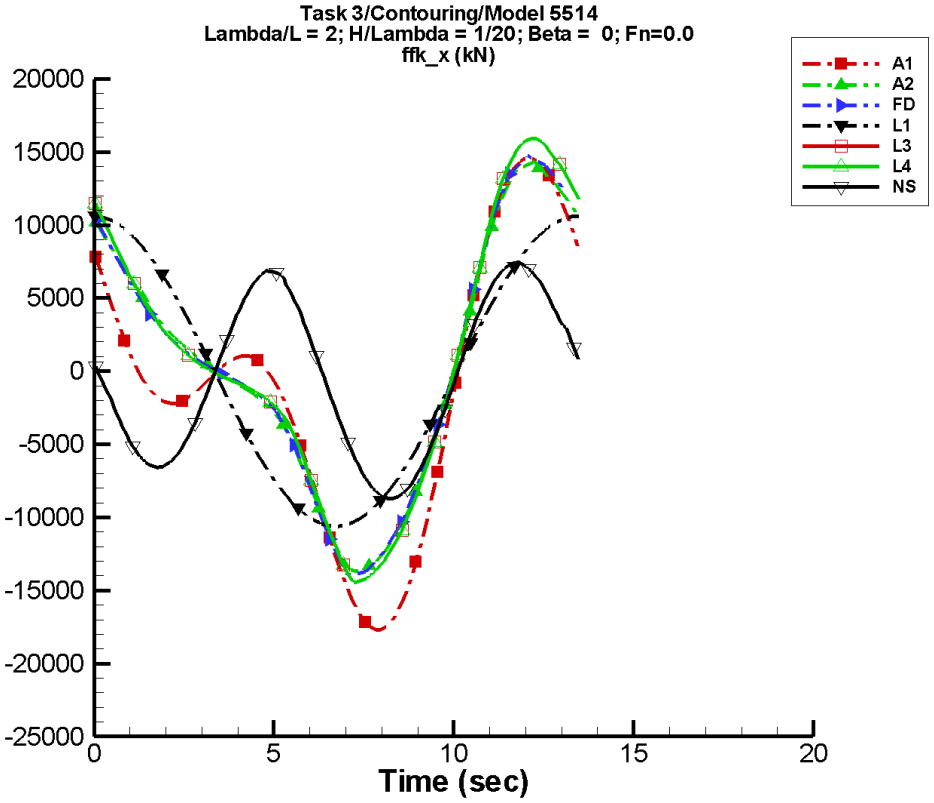
Figure J–52. Time history of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–103. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	—	—	—	—	—
A2	-38.7	2.68E+03	-106	1.24E+05	-16
FD	-48.5	5.28E+03	76	1.73E+04	152
L1	-37.6	65.4	94	1.41E+05	165
L3	-3.41	503.	79	2.05E+04	165
L4	-3.41	503.	79	2.05E+04	165
NF	—	—	—	—	—
NS	-187.	1.67E+03	-93	1.04E+05	0

Table J–104. Minimum and maximum of of M_z^{hst} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	—	—	—	—
A2	-1.27E+05	1.27E+05	-1.22E+05	1.22E+05
FD	-2.12E+04	2.18E+04	-3.95E+03	5.95E+03
L1	-1.41E+05	1.41E+05	-1.38E+05	1.39E+05
L3	-2.14E+04	2.14E+04	-2.11E+04	2.11E+04
L4	-2.14E+04	2.14E+04	-2.11E+04	2.11E+04
NF	—	—	—	—
NS	-1.07E+05	1.07E+05	-1.06E+05	1.05E+05



Data identically zero, insufficient, or not available from NFA.

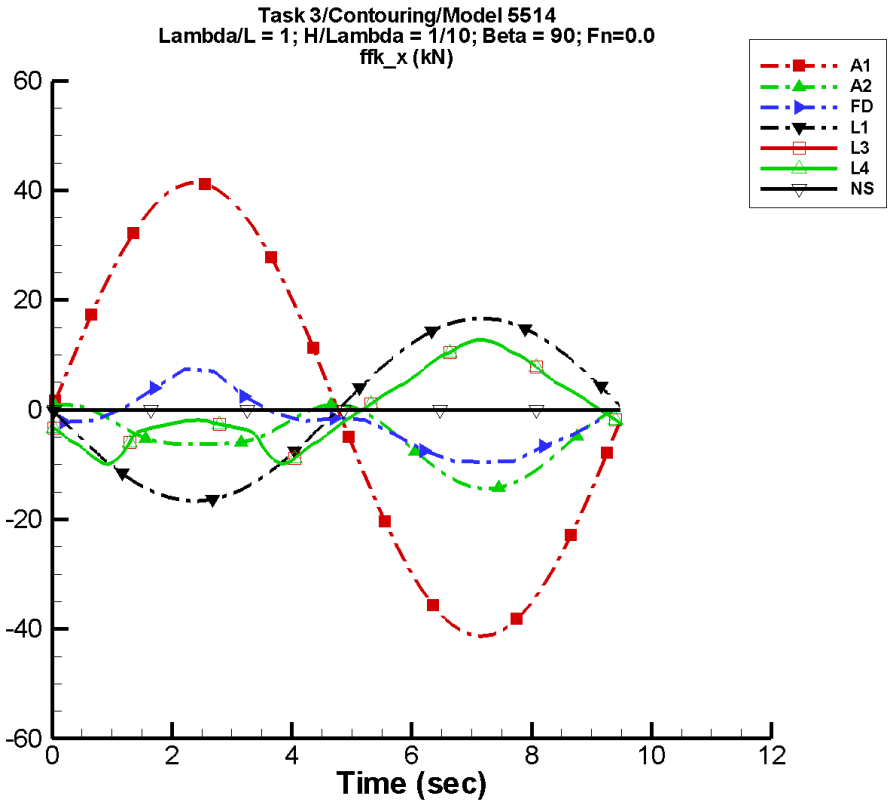
Figure J–53. Time history of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–105. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-1.19E+03	1.06E+04	86	7.95E+03	180
A2	374.	1.12E+04	88	4.45E+03	-180
FD	439.	1.14E+04	89	4.76E+03	180
L1	-0.295	1.06E+04	85	0.974	-160
L3	654.	1.18E+04	88	5.21E+03	173
L4	654.	1.18E+04	88	5.21E+03	173
NF	—	—	—	—	—
NS	-427.	1.44E+03	82	7.26E+03	-177

Table J–106. Minimum and maximum of of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.77E+04	1.46E+04	-1.75E+04	1.44E+04
A2	-1.37E+04	1.43E+04	-1.35E+04	1.40E+04
FD	-1.40E+04	1.47E+04	-1.01E+04	1.10E+04
L1	-1.06E+04	1.06E+04	-1.06E+04	1.06E+04
L3	-1.44E+04	1.59E+04	-1.44E+04	1.58E+04
L4	-1.44E+04	1.59E+04	-1.44E+04	1.58E+04
NF	—	—	—	—
NS	-8.72E+03	7.40E+03	-8.64E+03	7.31E+03



Data identically zero, insufficient, or not available from NFA.

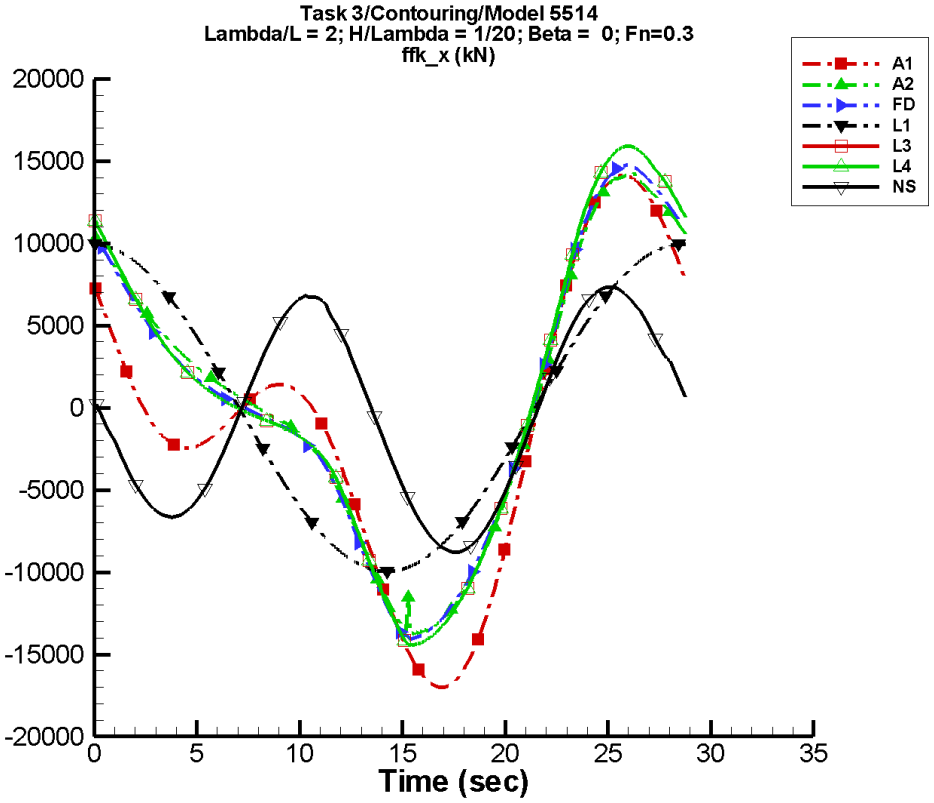
Figure J–54. Time history of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–107. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-2.63E-02	41.3	-4	4.07E-02	-28
A2	-5.30	3.32	-9	5.66	75
FD	-2.37	6.50	-14	0.878	-112
L1	3.08E-03	16.7	172	4.77E-03	114
L3	8.66E-02	8.01	173	4.91	-107
L4	8.66E-02	8.01	173	4.91	-107
NF	—	—	—	—	—
NS	1.70E-05	1.72E-04	93	1.35E-03	177

Table J–108. Minimum and maximum of of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-41.3	41.3	-40.9	40.9
A2	-14.4	0.908	-14.1	0.837
FD	-9.49	7.42	-6.99	2.33
L1	-16.7	16.7	-16.6	16.6
L3	-9.91	12.7	-9.35	12.5
L4	-9.91	12.7	-9.35	12.5
NF	—	—	—	—
NS	-1.34E-03	1.40E-03	-1.33E-03	1.39E-03



Data identically zero, insufficient, or not available from NFA.

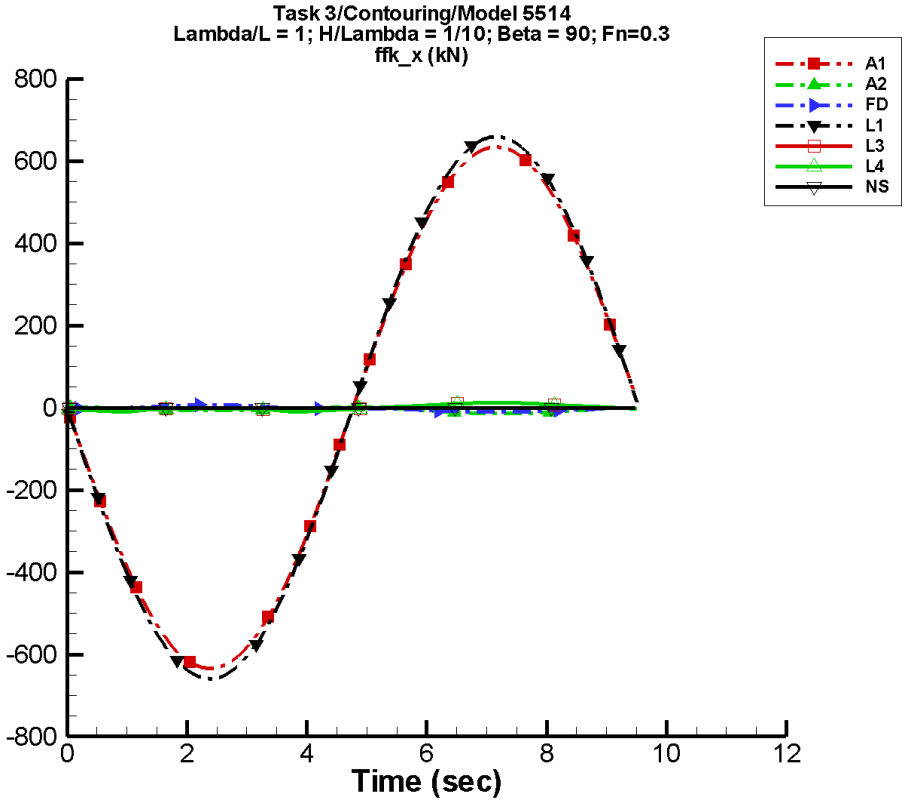
Figure J–55. Time history of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–109. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-1.09E+03	9.90E+03	89	7.95E+03	-174
A2	496.	1.12E+04	90	4.49E+03	-173
FD	451.	1.13E+04	96	4.77E+03	-166
L1	0.355	9.96E+03	92	0.336	-96
L3	653.	1.18E+04	95	5.18E+03	-174
L4	653.	1.18E+04	95	5.18E+03	-174
NF	—	—	—	—	—
NS	-491.	1.43E+03	83	7.26E+03	-175

Table J–110. Minimum and maximum of of F_x^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.70E+04	1.41E+04	-1.70E+04	1.41E+04
A2	-1.38E+04	1.43E+04	-1.36E+04	1.41E+04
FD	-1.41E+04	1.48E+04	-1.30E+04	1.38E+04
L1	-9.96E+03	9.96E+03	-9.95E+03	9.95E+03
L3	-1.44E+04	1.59E+04	-1.44E+04	1.59E+04
L4	-1.44E+04	1.59E+04	-1.44E+04	1.59E+04
NF	—	—	—	—
NS	-8.78E+03	7.33E+03	-8.71E+03	7.25E+03



Data identically zero, insufficient, or not available from NFA.

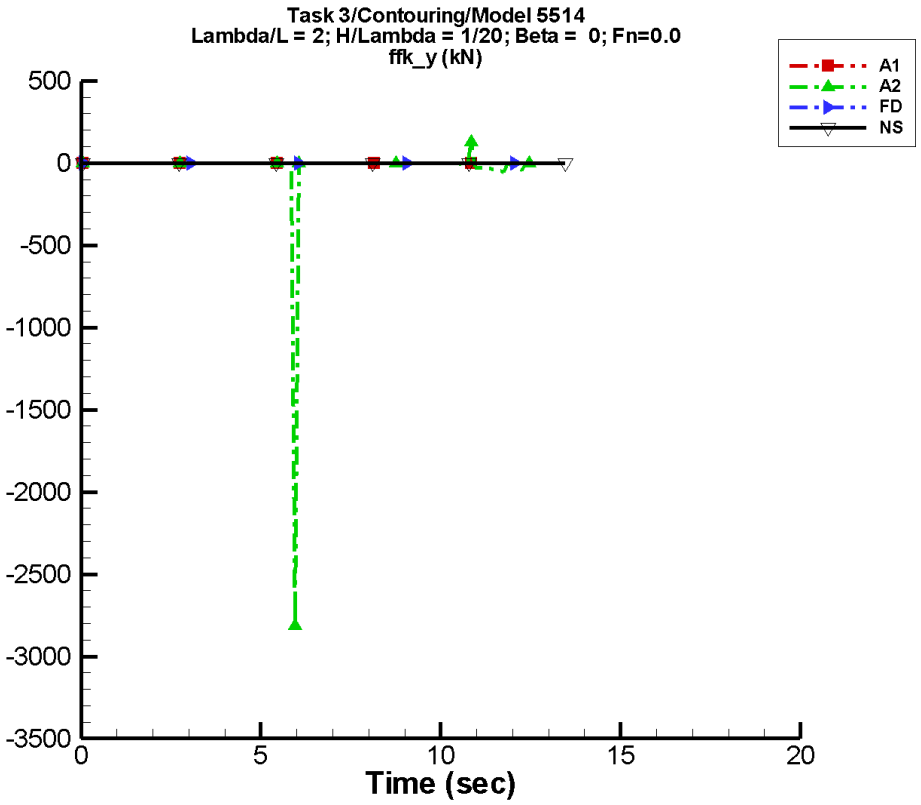
Figure J–56. Time history of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–111. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	0.404	635.	176	0.625	152
A2	-5.30	3.32	-9	5.66	75
FD	-2.37	6.50	-14	0.875	-112
L1	0.124	659.	172	0.187	114
L3	8.72E-02	8.01	173	4.91	-107
L4	8.72E-02	8.01	173	4.91	-107
NF	—	—	—	—	—
NS	1.71E-05	1.72E-04	93	1.35E-03	177

Table J–112. Minimum and maximum of of F_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-635.	635.	-628.	628.
A2	-14.4	0.908	-14.1	0.837
FD	-9.51	7.42	-6.99	2.33
L1	-659.	659.	-657.	656.
L3	-9.91	12.7	-9.35	12.5
L4	-9.91	12.7	-9.35	12.5
NF	—	—	—	—
NS	-1.34E-03	1.40E-03	-1.33E-03	1.39E-03



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

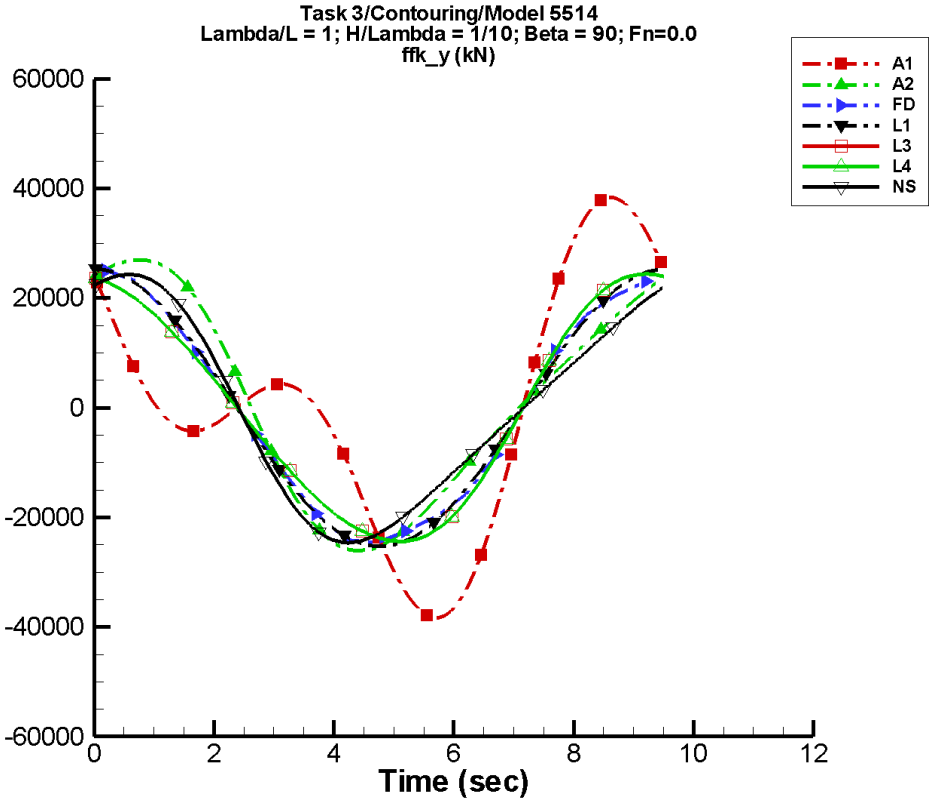
Figure J–57. Time history of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–113. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-2.68E-07	4.04E-04	85	3.97E-07	6
A2	-24.9	36.9	109	41.3	-53
FD	-2.45E-06	3.70E-05	102	7.53E-06	31
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	2.68E-04	1.58E-03	-145	8.59E-04	4

Table J–114. Minimum and maximum of of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-4.04E-04	4.04E-04	-4.02E-04	4.05E-04
A2	-2.81E+03	129.	-375.	32.1
FD	-1.79E-04	1.80E-04	-3.56E-05	3.37E-05
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-1.11E-02	1.30E-02	-3.49E-03	6.63E-03



Data identically zero, insufficient, or not available from NFA.

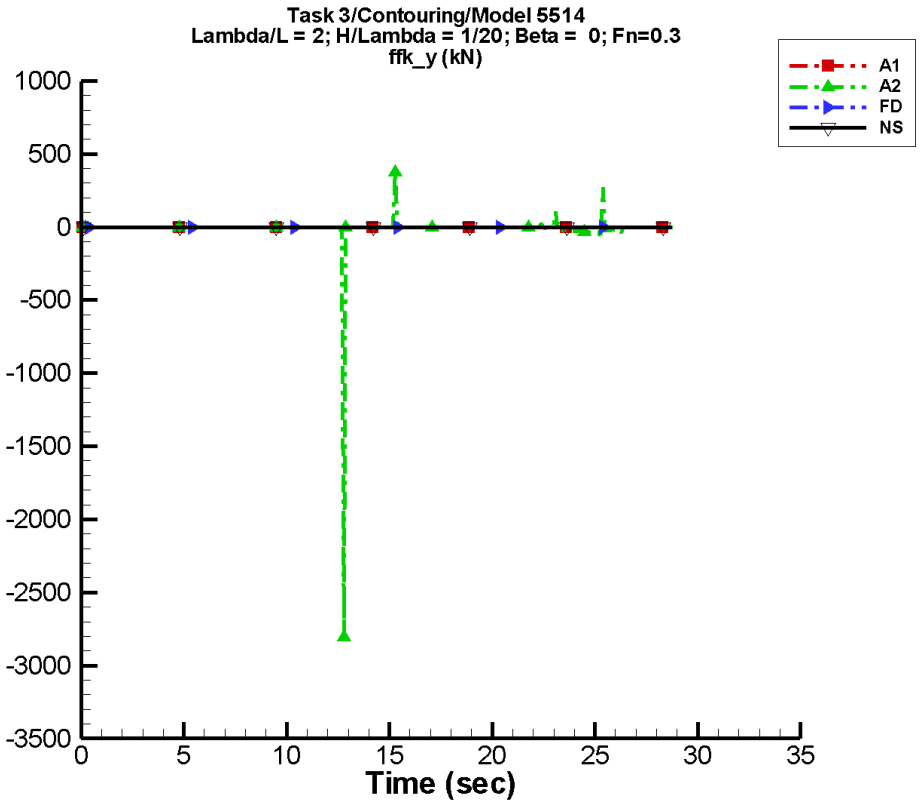
Figure J–58. Time history of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–115. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-12.1	2.46E+04	86	1.94E+04	171
A2	1.32E+03	2.52E+04	80	5.19E+03	-32
FD	1.75	2.50E+04	76	75.8	150
L1	-1.60	2.53E+04	82	2.58	-88
L3	-22.6	2.43E+04	82	2.37E+03	166
L4	-22.6	2.43E+04	82	2.37E+03	166
NF	—	—	—	—	—
NS	-28.7	2.30E+04	89	4.77E+03	-5

Table J–116. Minimum and maximum of of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-3.83E+04	3.83E+04	-3.73E+04	3.73E+04
A2	-2.61E+04	2.70E+04	-2.57E+04	2.67E+04
FD	-2.47E+04	2.50E+04	-1.93E+04	2.23E+04
L1	-2.53E+04	2.53E+04	-2.52E+04	2.54E+04
L3	-2.44E+04	2.44E+04	-2.43E+04	2.43E+04
L4	-2.44E+04	2.44E+04	-2.43E+04	2.43E+04
NF	—	—	—	—
NS	-2.46E+04	2.43E+04	-2.45E+04	2.42E+04



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

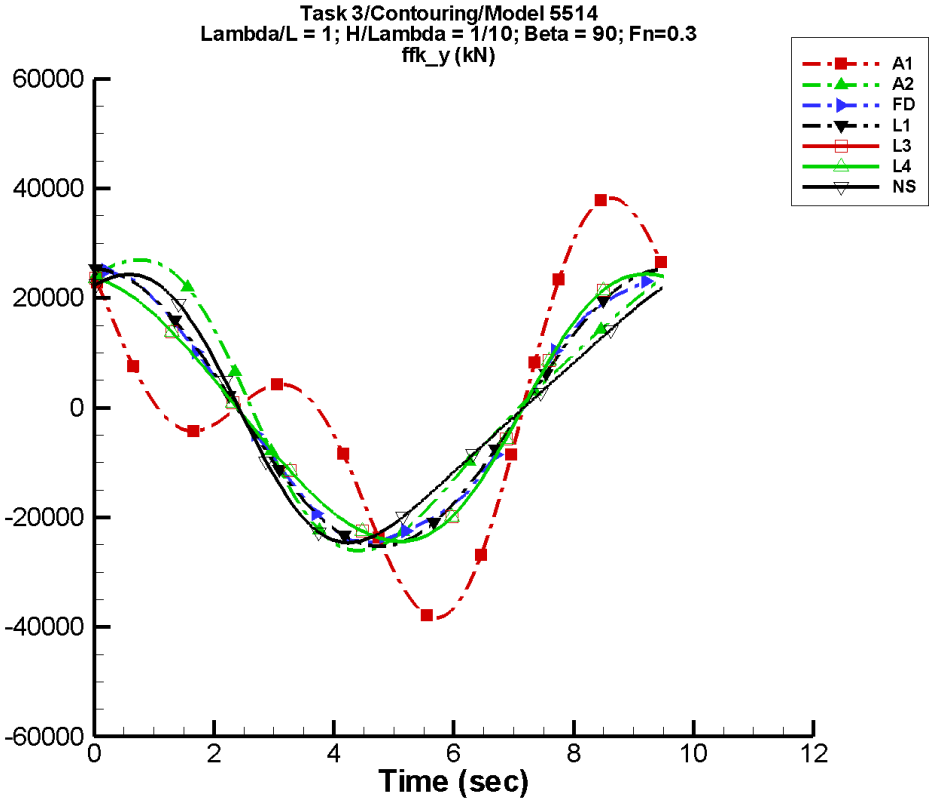
Figure J–59. Time history of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–117. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-9.63E-08	4.04E-04	88	1.40E-07	19
A2	-11.0	13.7	112	19.1	-39
FD	1.31E-05	1.41E-05	109	2.09E-05	-113
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	5.74E-04	2.17E-03	-177	5.37E-04	-48

Table J–118. Minimum and maximum of of F_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-4.04E-04	4.04E-04	-4.04E-04	4.05E-04
A2	-2.81E+03	373.	-374.	45.1
FD	-2.34E-04	2.49E-04	-2.73E-05	4.92E-05
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-7.84E-03	1.18E-02	-2.43E-03	3.92E-03



Data identically zero, insufficient, or not available from NFA.

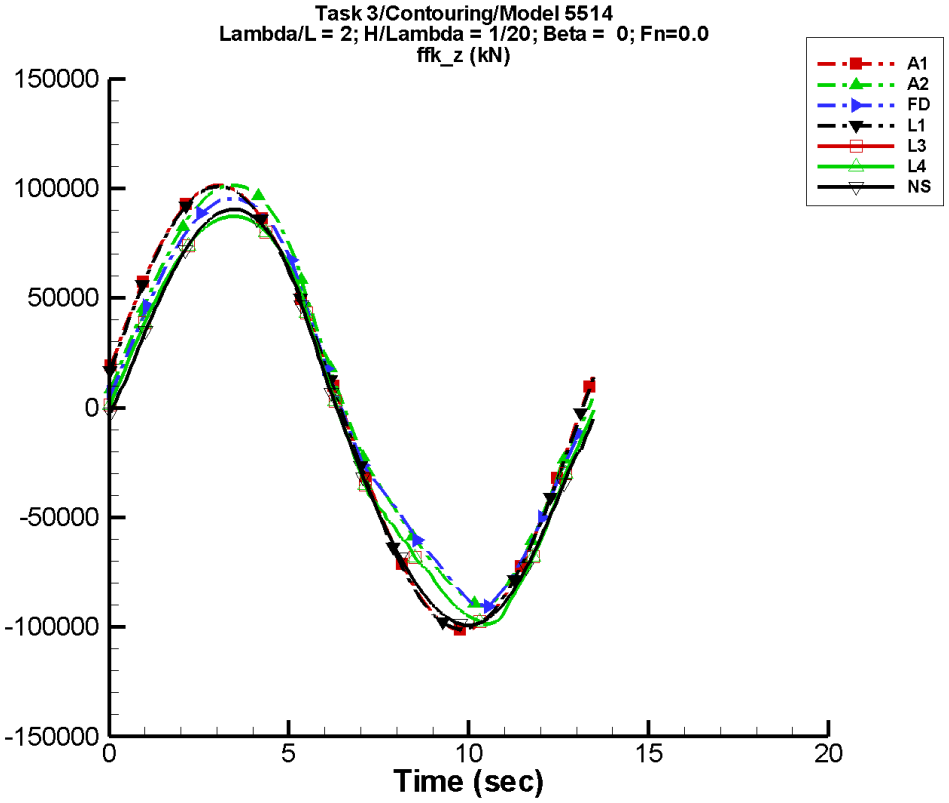
Figure J–60. Time history of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–119. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-12.1	2.45E+04	86	1.93E+04	171
A2	1.32E+03	2.52E+04	80	5.19E+03	-32
FD	1.74	2.50E+04	76	75.8	150
L1	-1.60	2.53E+04	82	2.57	-88
L3	-22.6	2.43E+04	82	2.37E+03	166
L4	-22.6	2.43E+04	82	2.37E+03	166
NF	—	—	—	—	—
NS	-28.4	2.30E+04	89	4.77E+03	-5

Table J–120. Minimum and maximum of of F_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-3.83E+04	3.83E+04	-3.73E+04	3.73E+04
A2	-2.61E+04	2.70E+04	-2.57E+04	2.67E+04
FD	-2.47E+04	2.50E+04	-1.93E+04	2.23E+04
L1	-2.53E+04	2.53E+04	-2.52E+04	2.54E+04
L3	-2.44E+04	2.44E+04	-2.43E+04	2.43E+04
L4	-2.44E+04	2.44E+04	-2.43E+04	2.43E+04
NF	—	—	—	—
NS	-2.46E+04	2.43E+04	-2.45E+04	2.42E+04



Data identically zero, insufficient, or not available from NFA.

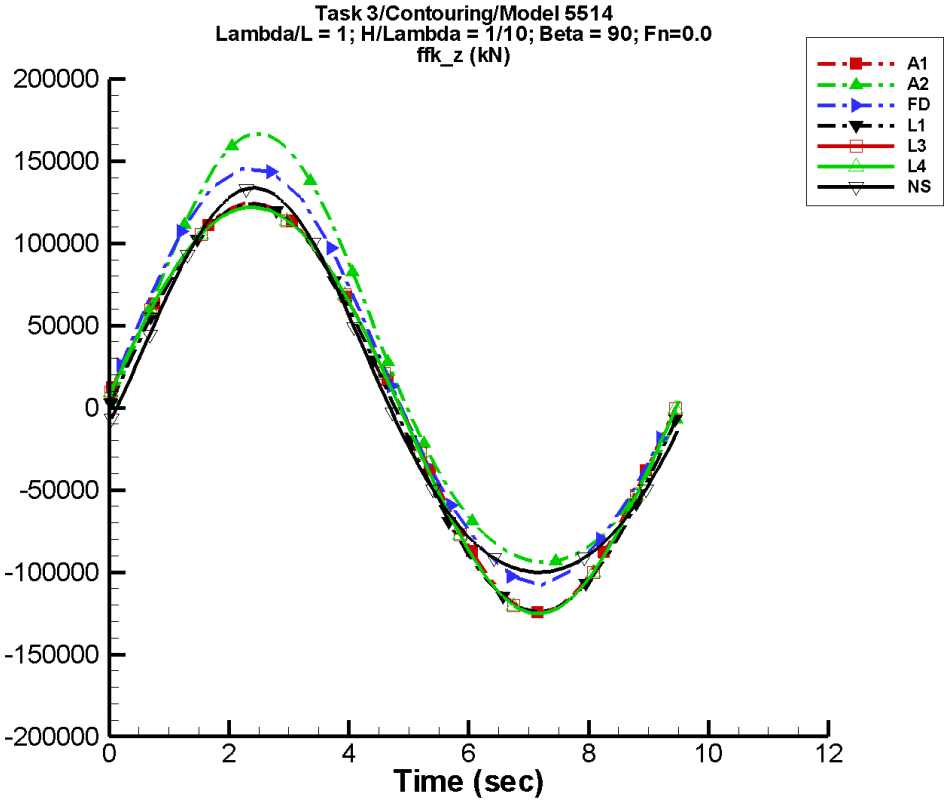
Figure J–61. Time history of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–121. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	754.	1.01E+05	4	764.	75
A2	4.36E+03	9.32E+04	-2	3.64E+03	-99
FD	2.00E+03	9.00E+04	-2	3.76E+03	-85
L1	19.7	1.01E+05	3	46.3	67
L3	-5.15E+03	9.17E+04	-2	2.76E+03	-116
L4	-5.15E+03	9.17E+04	-2	2.76E+03	-116
NF	—	—	—	—	—
NS	-7.13E+03	9.38E+04	3	4.75E+03	-132

Table J–122. Minimum and maximum of of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.01E+05	1.01E+05	-1.01E+05	1.01E+05
A2	-9.04E+04	1.02E+05	-8.94E+04	1.02E+05
FD	-9.07E+04	9.57E+04	-7.42E+04	8.02E+04
L1	-1.01E+05	1.01E+05	-1.01E+05	1.01E+05
L3	-9.89E+04	8.73E+04	-9.84E+04	8.71E+04
L4	-9.89E+04	8.73E+04	-9.84E+04	8.71E+04
NF	—	—	—	—
NS	-9.92E+04	9.05E+04	-9.90E+04	9.05E+04



Data identically zero, insufficient, or not available from NFA.

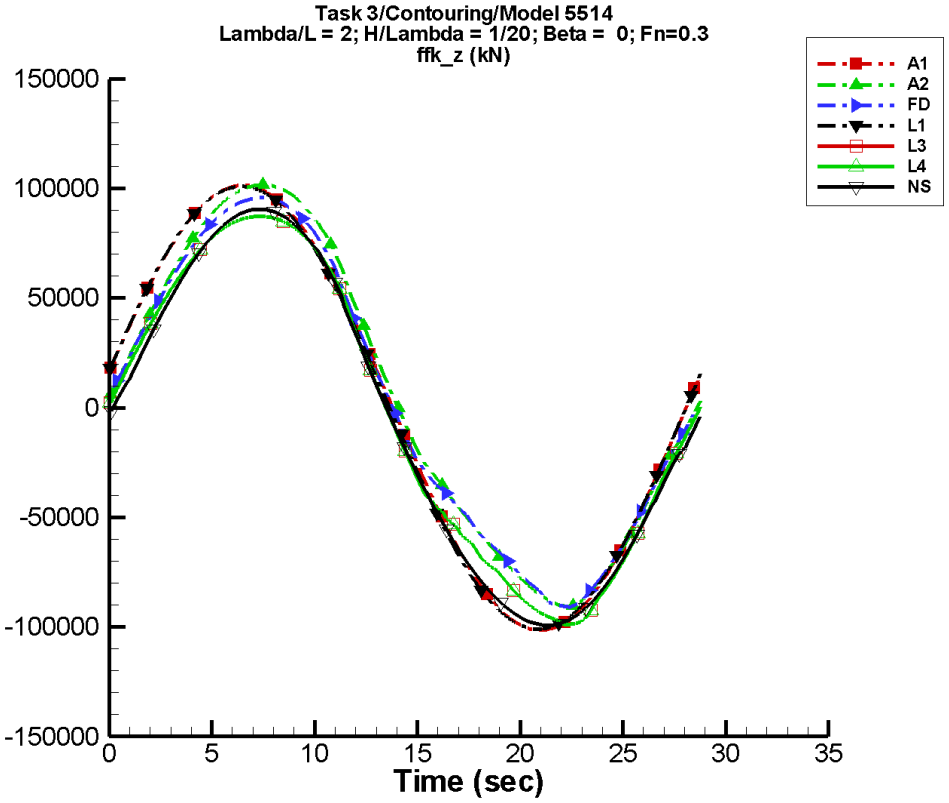
Figure J–62. Time history of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–123. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	3.80E+03	1.23E+05	-4	3.77E+03	81
A2	2.25E+04	1.30E+05	-8	1.39E+04	-107
FD	1.51E+04	1.27E+05	-14	5.52E+03	-118
L1	-23.3	1.24E+05	-8	35.2	-66
L3	2.56E+03	1.23E+05	-8	4.15E+03	74
L4	2.56E+03	1.23E+05	-8	4.15E+03	74
NF	—	—	—	—	—
NS	4.29E+03	1.17E+05	-1	1.26E+04	-94

Table J–124. Minimum and maximum of of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.24E+05	1.24E+05	-1.23E+05	1.23E+05
A2	-9.39E+04	1.67E+05	-9.31E+04	1.64E+05
FD	-1.08E+05	1.45E+05	-7.71E+04	1.09E+05
L1	-1.24E+05	1.24E+05	-1.23E+05	1.23E+05
L3	-1.25E+05	1.22E+05	-1.25E+05	1.21E+05
L4	-1.25E+05	1.22E+05	-1.25E+05	1.21E+05
NF	—	—	—	—
NS	-1.00E+05	1.34E+05	-9.99E+04	1.33E+05



Data identically zero, insufficient, or not available from NFA.

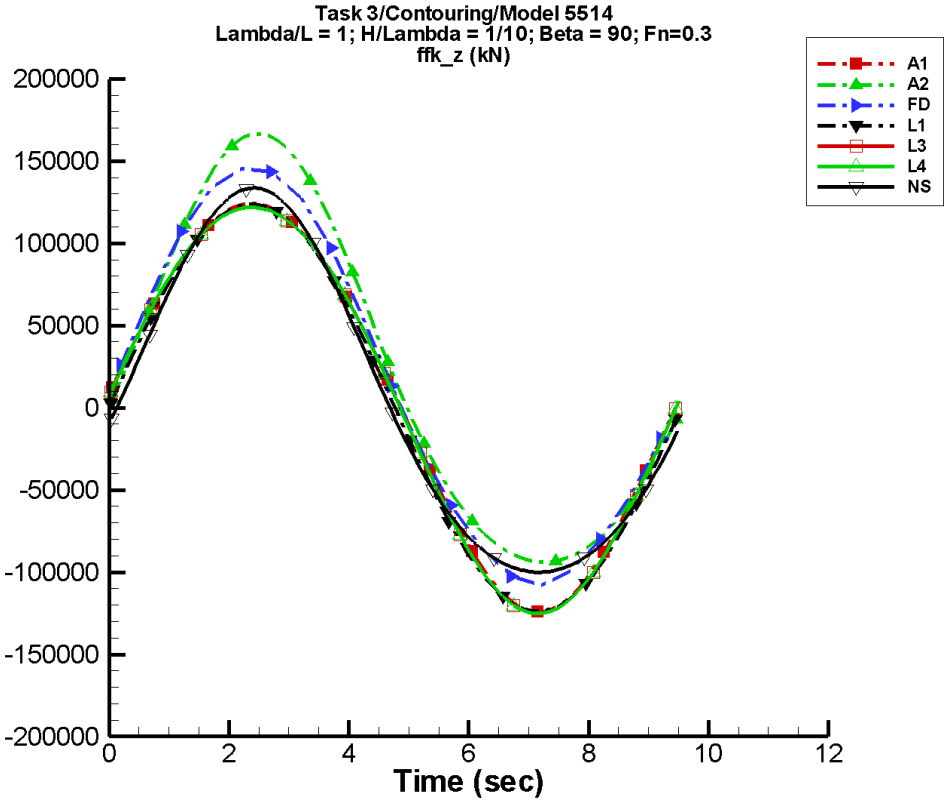
Figure J–63. Time history of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–125. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	749.	1.01E+05	7	726.	87
A2	4.34E+03	9.33E+04	0	3.61E+03	-96
FD	2.34E+03	9.04E+04	5	3.72E+03	-81
L1	1.53	1.01E+05	9	4.63	167
L3	-4.88E+03	9.15E+04	4	2.15E+03	-77
L4	-4.88E+03	9.15E+04	4	2.15E+03	-77
NF	—	—	—	—	—
NS	-7.06E+03	9.38E+04	4	4.75E+03	-131

Table J–126. Minimum and maximum of of F_z^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.01E+05	1.01E+05	-1.01E+05	1.02E+05
A2	-9.06E+04	1.02E+05	-9.04E+04	1.02E+05
FD	-9.08E+04	9.58E+04	-8.54E+04	9.32E+04
L1	-1.01E+05	1.01E+05	-1.01E+05	1.01E+05
L3	-9.90E+04	8.73E+04	-9.88E+04	8.72E+04
L4	-9.90E+04	8.73E+04	-9.88E+04	8.72E+04
NF	—	—	—	—
NS	-9.92E+04	9.05E+04	-9.90E+04	9.05E+04



Data identically zero, insufficient, or not available from NFA.

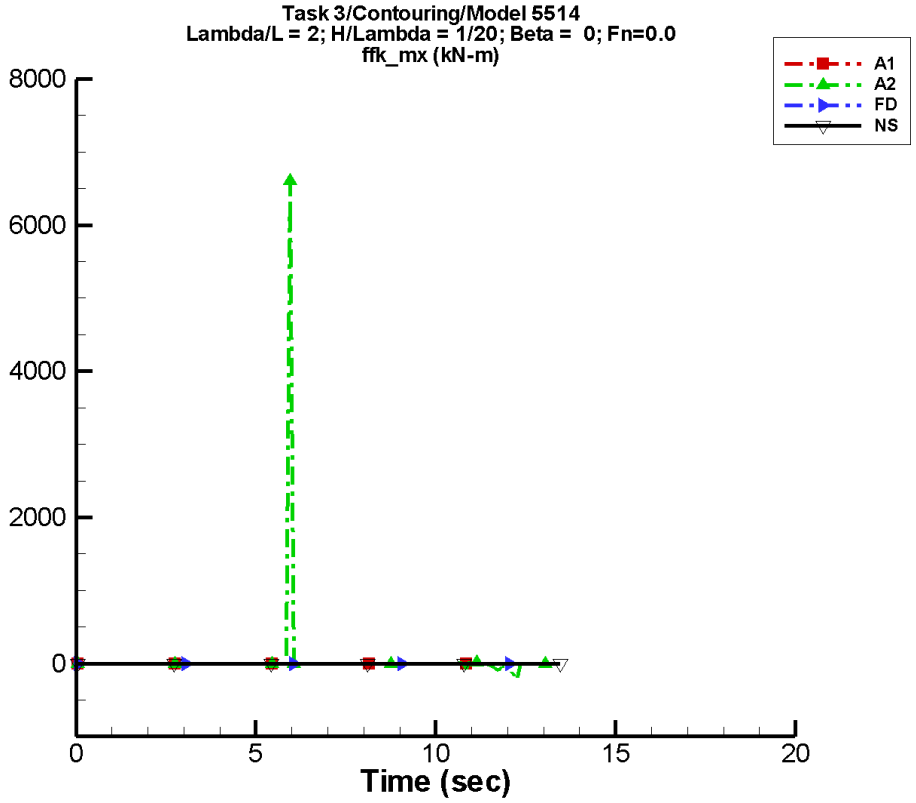
Figure J–64. Time history of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–127. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	3.80E+03	1.23E+05	-4	3.77E+03	81
A2	2.25E+04	1.30E+05	-8	1.39E+04	-107
FD	1.51E+04	1.27E+05	-14	5.52E+03	-118
L1	-23.3	1.24E+05	-8	35.1	-66
L3	2.56E+03	1.23E+05	-8	4.15E+03	74
L4	2.56E+03	1.23E+05	-8	4.15E+03	74
NF	—	—	—	—	—
NS	4.29E+03	1.17E+05	-1	1.26E+04	-94

Table J–128. Minimum and maximum of of F_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.24E+05	1.24E+05	-1.23E+05	1.23E+05
A2	-9.39E+04	1.67E+05	-9.31E+04	1.64E+05
FD	-1.08E+05	1.45E+05	-7.71E+04	1.09E+05
L1	-1.24E+05	1.24E+05	-1.23E+05	1.23E+05
L3	-1.25E+05	1.22E+05	-1.25E+05	1.21E+05
L4	-1.25E+05	1.22E+05	-1.25E+05	1.21E+05
NF	—	—	—	—
NS	-1.00E+05	1.34E+05	-9.99E+04	1.33E+05



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

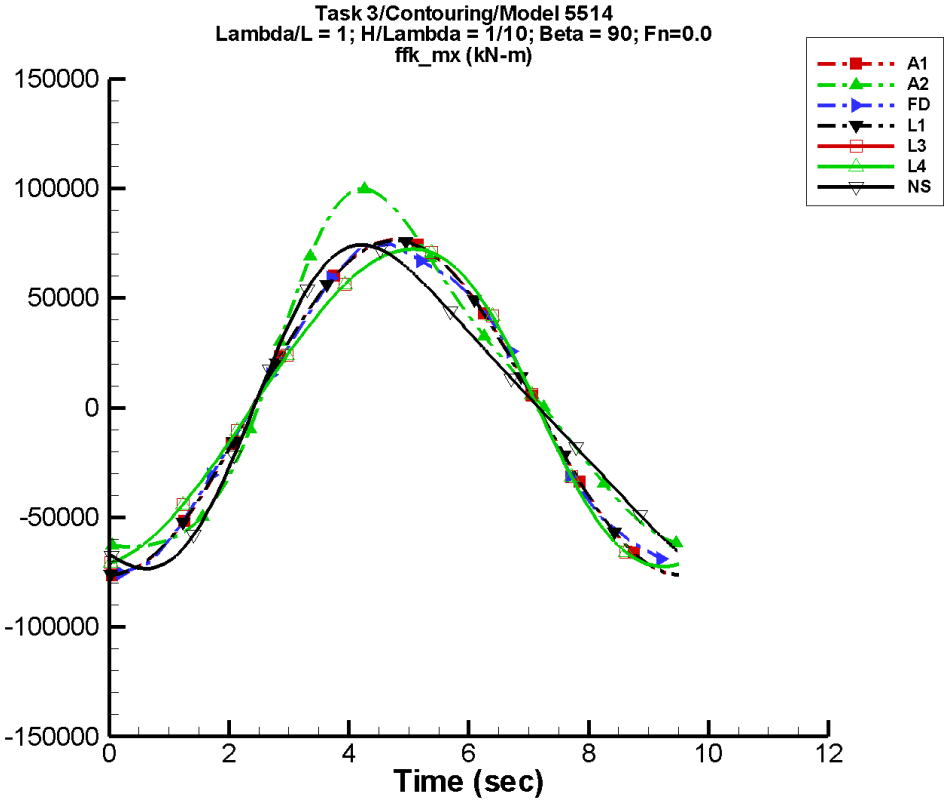
Figure J–65. Time history of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–129. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	4.23E-06	5.49E-03	-105	6.13E-06	-178
A2	47.1	106.	-68	83.7	117
FD	-5.63E-05	6.78E-05	19	9.96E-05	38
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-2.41E-03	4.94E-03	-14	7.35E-03	18

Table J–130. Minimum and maximum of of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-5.49E-03	5.49E-03	-5.47E-03	5.46E-03
A2	-227.	6.60E+03	-82.6	880.
FD	-8.32E-04	7.37E-04	-1.54E-04	9.61E-05
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-9.31E-02	6.41E-02	-5.30E-02	3.59E-02



Data identically zero, insufficient, or not available from NFA.

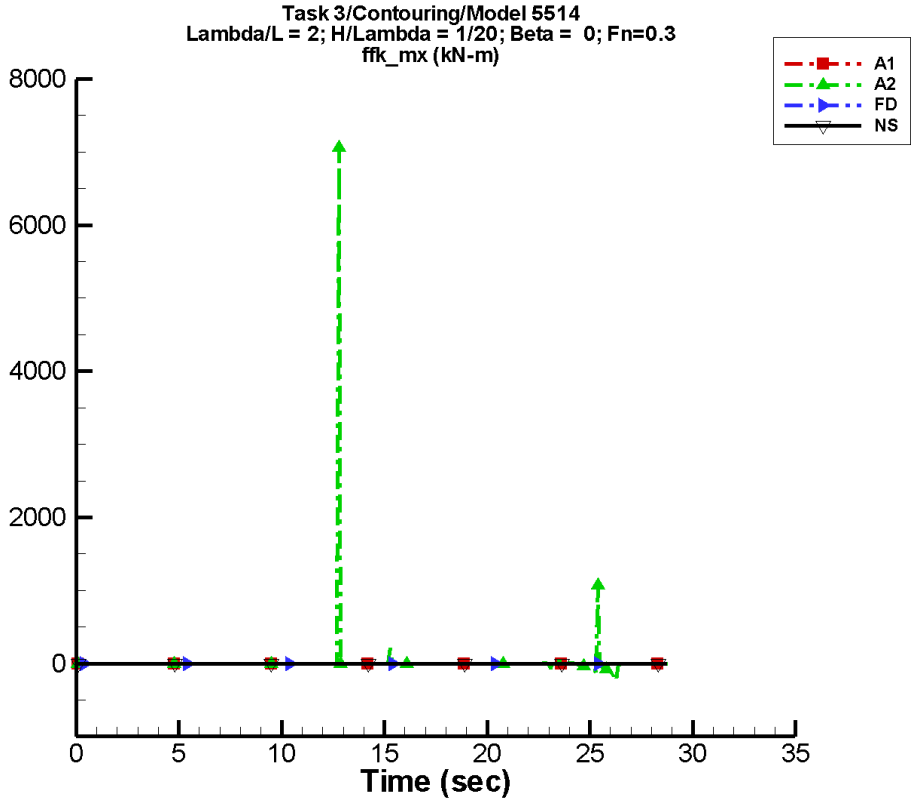
Figure J–66. Time history of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–131. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	64.4	7.65E+04	-94	88.0	-151
A2	7.18E+03	7.67E+04	-94	1.68E+04	140
FD	-10.5	7.54E+04	-104	492.	154
L1	4.83	7.62E+04	-98	7.76	92
L3	60.7	7.25E+04	-98	6.27E+03	-14
L4	60.7	7.25E+04	-98	6.27E+03	-14
NF	—	—	—	—	—
NS	59.8	6.90E+04	-91	1.52E+04	175

Table J–132. Minimum and maximum of of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-7.65E+04	7.65E+04	-7.63E+04	7.56E+04
A2	-6.34E+04	9.98E+04	-6.32E+04	9.80E+04
FD	-7.56E+04	7.46E+04	-6.76E+04	5.86E+04
L1	-7.62E+04	7.62E+04	-7.66E+04	7.59E+04
L3	-7.23E+04	7.24E+04	-7.21E+04	7.21E+04
L4	-7.23E+04	7.24E+04	-7.21E+04	7.21E+04
NF	—	—	—	—
NS	-7.34E+04	7.43E+04	-7.31E+04	7.40E+04



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

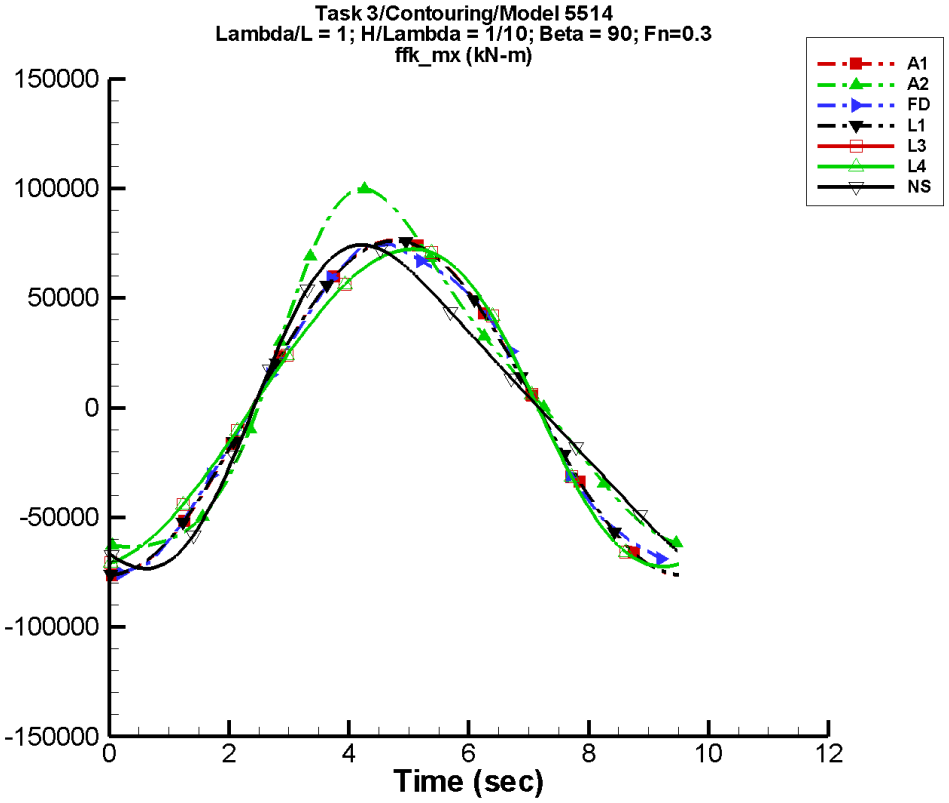
Figure J–67. Time history of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–133. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	1.50E-06	5.49E-03	-102	2.13E-06	-167
A2	27.6	52.9	-65	40.3	127
FD	-1.89E-06	2.30E-05	13	3.45E-05	120
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-2.04E-03	4.63E-03	25	7.84E-04	28

Table J–134. Minimum and maximum of of M_x^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-5.49E-03	5.49E-03	-5.49E-03	5.48E-03
A2	-243.	7.06E+03	-115.	942.
FD	-1.31E-03	1.27E-03	-2.81E-04	2.97E-04
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-5.81E-02	4.06E-02	-1.41E-02	8.43E-03



Data identically zero, insufficient, or not available from NFA.

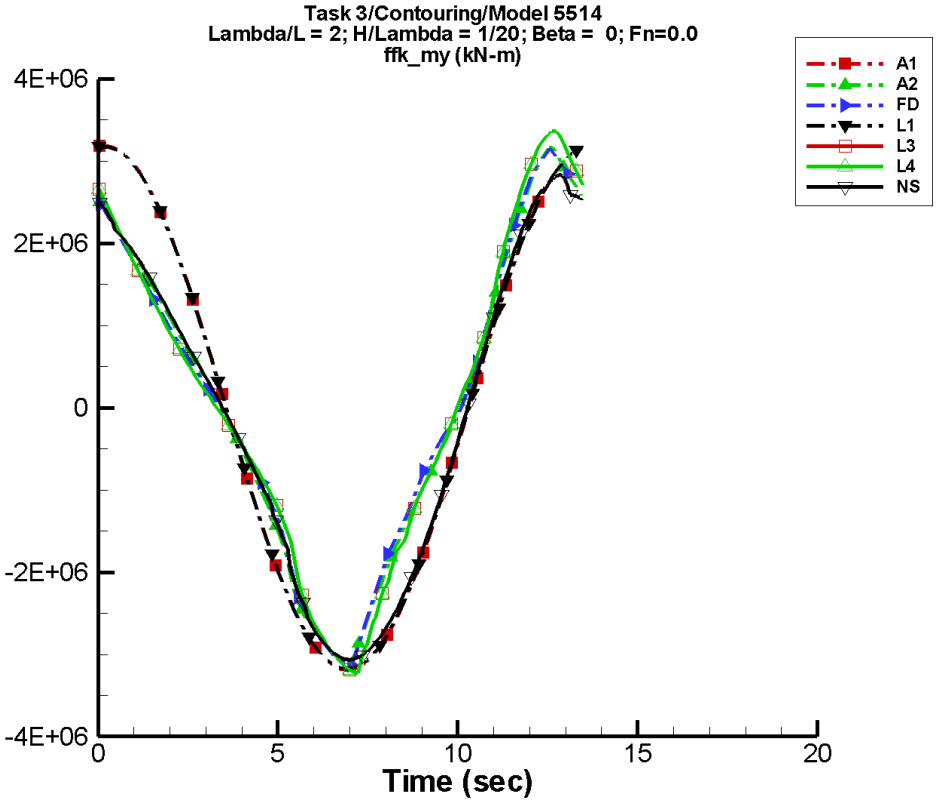
Figure J–68. Time history of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–135. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	64.3	7.64E+04	-94	88.0	-151
A2	7.18E+03	7.67E+04	-94	1.68E+04	140
FD	-10.5	7.54E+04	-104	492.	154
L1	4.83	7.61E+04	-98	7.75	92
L3	60.7	7.25E+04	-98	6.27E+03	-14
L4	60.7	7.25E+04	-98	6.27E+03	-14
NF	—	—	—	—	—
NS	58.5	6.90E+04	-91	1.52E+04	175

Table J–136. Minimum and maximum of of M_x^{fk} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-7.64E+04	7.64E+04	-7.62E+04	7.56E+04
A2	-6.34E+04	9.98E+04	-6.32E+04	9.80E+04
FD	-7.56E+04	7.46E+04	-6.76E+04	5.86E+04
L1	-7.61E+04	7.62E+04	-7.65E+04	7.59E+04
L3	-7.23E+04	7.24E+04	-7.21E+04	7.21E+04
L4	-7.23E+04	7.24E+04	-7.21E+04	7.21E+04
NF	—	—	—	—
NS	-7.34E+04	7.43E+04	-7.31E+04	7.40E+04



Data identically zero, insufficient, or not available from NFA.

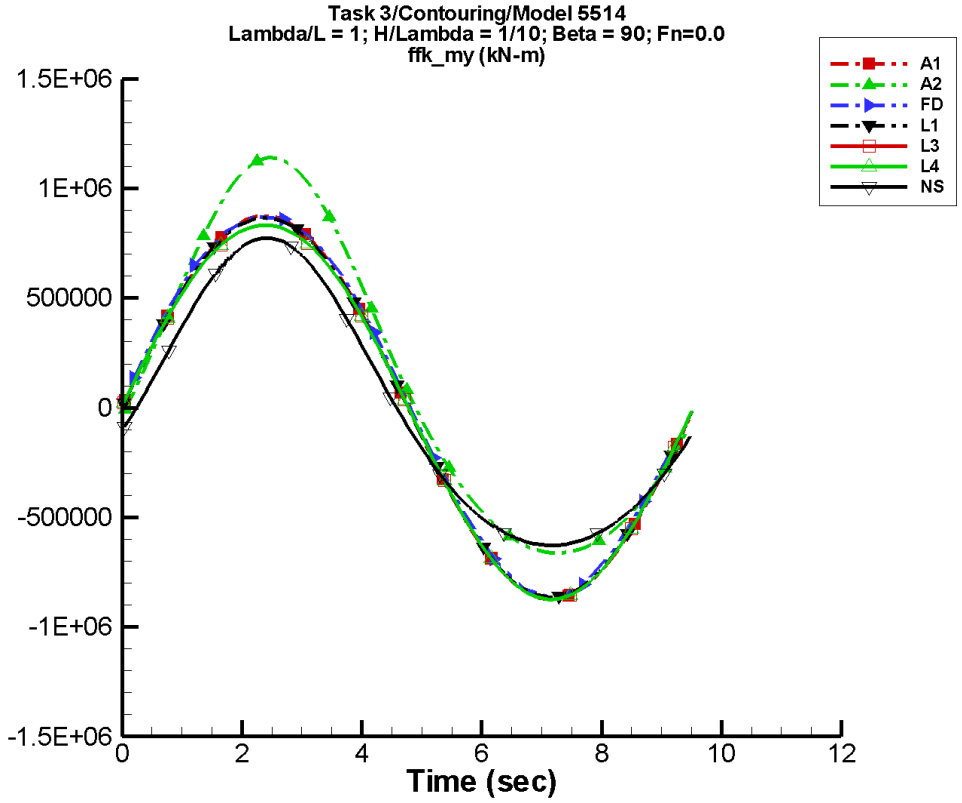
Figure J–69. Time history of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–137. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-2.27E+03	3.19E+06	81	3.33E+03	4
A2	2.71E+04	2.64E+06	91	3.17E+05	-165
FD	4.14E+04	2.60E+06	91	3.64E+05	-166
L1	-25.7	3.17E+06	80	216.	171
L3	4.49E+04	2.72E+06	90	5.42E+05	-174
L4	4.49E+04	2.72E+06	90	5.42E+05	-174
NF	—	—	—	—	—
NS	-1.35E+05	2.71E+06	88	4.18E+05	-167

Table J–138. Minimum and maximum of of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-3.19E+06	3.19E+06	-3.17E+06	3.20E+06
A2	-3.07E+06	3.17E+06	-3.01E+06	3.06E+06
FD	-3.14E+06	3.16E+06	-2.25E+06	2.29E+06
L1	-3.18E+06	3.17E+06	-3.17E+06	3.19E+06
L3	-3.22E+06	3.37E+06	-3.23E+06	3.33E+06
L4	-3.22E+06	3.37E+06	-3.23E+06	3.33E+06
NF	—	—	—	—
NS	-3.06E+06	2.83E+06	-3.05E+06	2.78E+06



Data identically zero, insufficient, or not available from NFA.

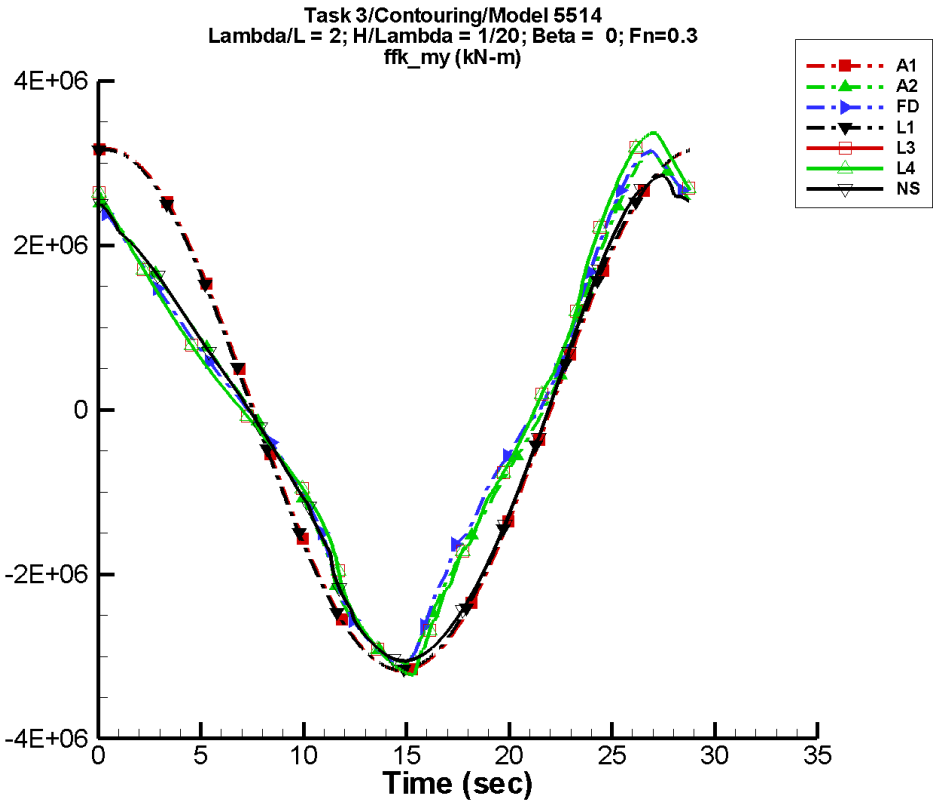
Figure J–70. Time history of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–139. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-556.	8.75E+05	-4	861.	-28
A2	1.26E+05	8.89E+05	-8	1.13E+05	-106
FD	1.82E+04	8.75E+05	-14	9.20E+03	62
L1	-163.	8.65E+05	-8	246.	-66
L3	-8.05E+03	8.55E+05	-8	1.28E+04	74
L4	-8.05E+03	8.55E+05	-8	1.28E+04	74
NF	—	—	—	—	—
NS	-1.31E+04	6.93E+05	-1	8.72E+04	-94

Table J–140. Minimum and maximum of of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-8.75E+05	8.75E+05	-8.65E+05	8.65E+05
A2	-6.63E+05	1.14E+06	-6.57E+05	1.12E+06
FD	-8.70E+05	8.72E+05	-6.18E+05	6.63E+05
L1	-8.65E+05	8.65E+05	-8.61E+05	8.61E+05
L3	-8.74E+05	8.32E+05	-8.71E+05	8.29E+05
L4	-8.74E+05	8.32E+05	-8.71E+05	8.29E+05
NF	—	—	—	—
NS	-6.28E+05	7.74E+05	-6.27E+05	7.73E+05



Data identically zero, insufficient, or not available from NFA.

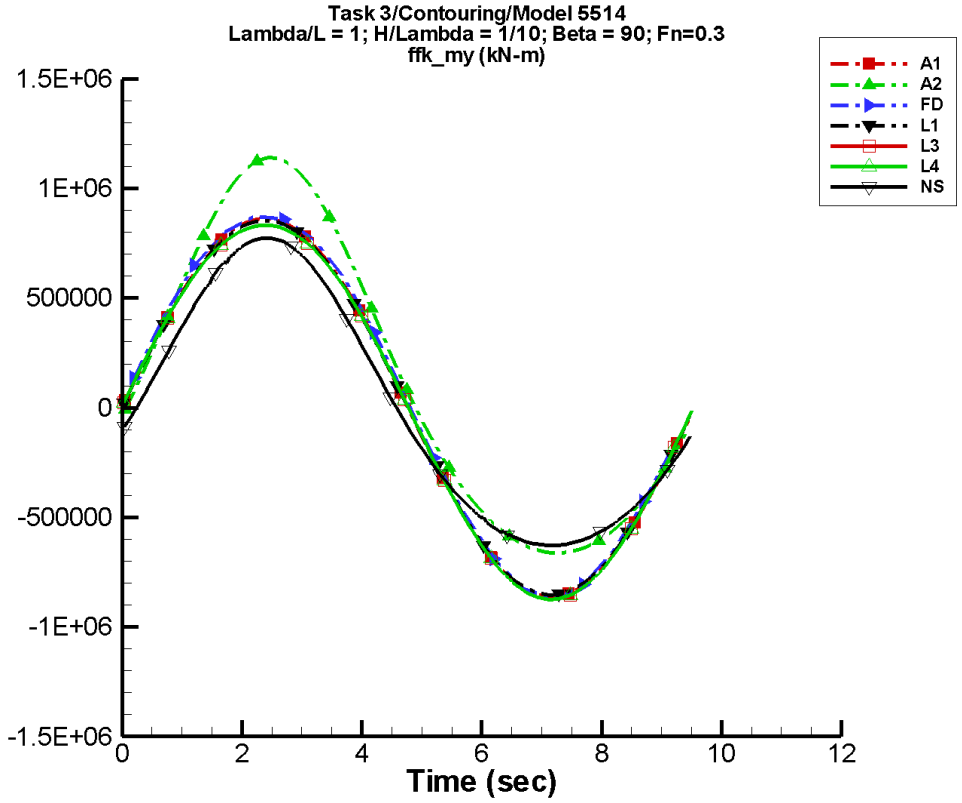
Figure J–71. Time history of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–141. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-810.	3.17E+06	84	1.16E+03	16
A2	1.87E+04	2.63E+06	92	3.21E+05	-160
FD	6.41E+04	2.58E+06	98	3.98E+05	-151
L1	118.	3.16E+06	86	106.	-102
L3	6.01E+04	2.69E+06	96	4.85E+05	-165
L4	6.01E+04	2.69E+06	96	4.85E+05	-165
NF	—	—	—	—	—
NS	-1.28E+05	2.71E+06	89	4.20E+05	-166

Table J–142. Minimum and maximum of of M_y^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-3.17E+06	3.17E+06	-3.17E+06	3.18E+06
A2	-3.08E+06	3.14E+06	-3.06E+06	3.10E+06
FD	-3.13E+06	3.16E+06	-2.85E+06	2.85E+06
L1	-3.16E+06	3.16E+06	-3.16E+06	3.16E+06
L3	-3.22E+06	3.37E+06	-3.21E+06	3.36E+06
L4	-3.22E+06	3.37E+06	-3.21E+06	3.36E+06
NF	—	—	—	—
NS	-3.06E+06	2.85E+06	-3.04E+06	2.80E+06



Data identically zero, insufficient, or not available from NFA.

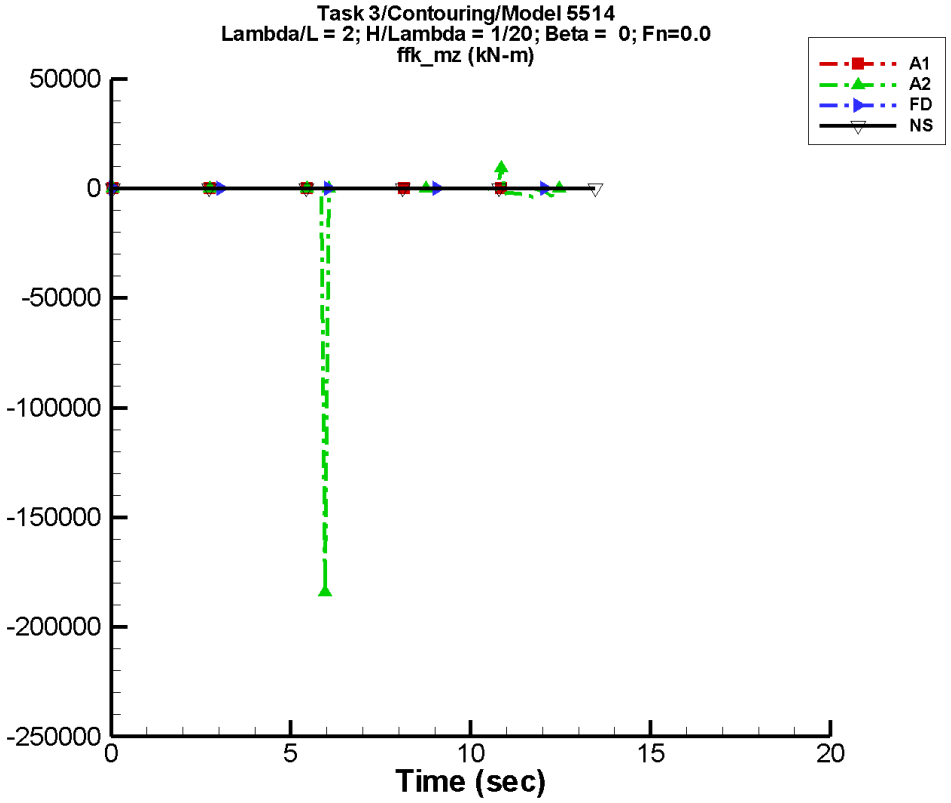
Figure J–72. Time history of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–143. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-549.	8.63E+05	-4	849.	-28
A2	1.26E+05	8.89E+05	-8	1.13E+05	-106
FD	1.82E+04	8.75E+05	-14	9.20E+03	62
L1	-160.	8.54E+05	-8	242.	-66
L3	-8.05E+03	8.55E+05	-8	1.28E+04	74
L4	-8.05E+03	8.55E+05	-8	1.28E+04	74
NF	—	—	—	—	—
NS	-1.32E+04	6.93E+05	-1	8.72E+04	-94

Table J–144. Minimum and maximum of of M_y^{fk} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-8.63E+05	8.63E+05	-8.53E+05	8.53E+05
A2	-6.63E+05	1.14E+06	-6.57E+05	1.12E+06
FD	-8.70E+05	8.72E+05	-6.18E+05	6.63E+05
L1	-8.53E+05	8.53E+05	-8.50E+05	8.50E+05
L3	-8.74E+05	8.32E+05	-8.71E+05	8.29E+05
L4	-8.74E+05	8.32E+05	-8.71E+05	8.29E+05
NF	—	—	—	—
NS	-6.28E+05	7.74E+05	-6.27E+05	7.73E+05



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

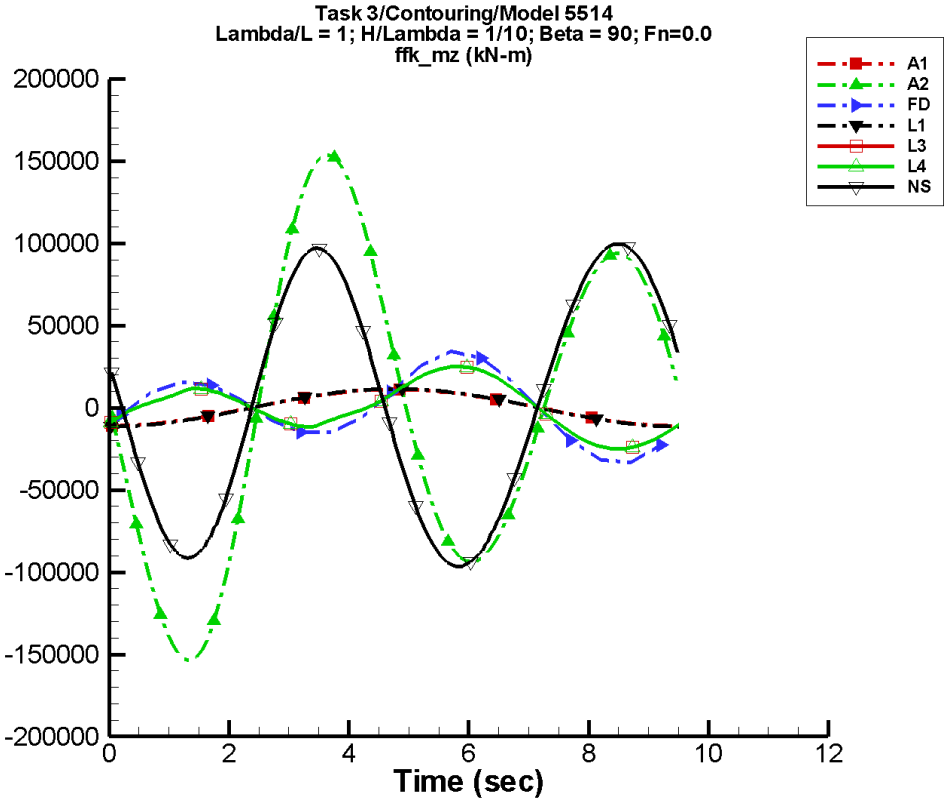
Figure J–73. Time history of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–145. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	1.60E-05	2.38E-02	-96	2.37E-05	-174
A2	-1.65E+03	2.38E+03	109	2.73E+03	-52
FD	-5.98E-04	1.54E-04	-98	2.51E-03	-46
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	1.96E-02	0.187	115	0.106	98

Table J–146. Minimum and maximum of of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-2.38E-02	2.38E-02	-2.39E-02	2.37E-02
A2	-1.84E+05	9.43E+03	-2.46E+04	2.10E+03
FD	-1.03E-02	9.13E-03	-4.90E-03	1.14E-03
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.513	0.974	-0.436	0.622



Data identically zero, insufficient, or not available from NFA.

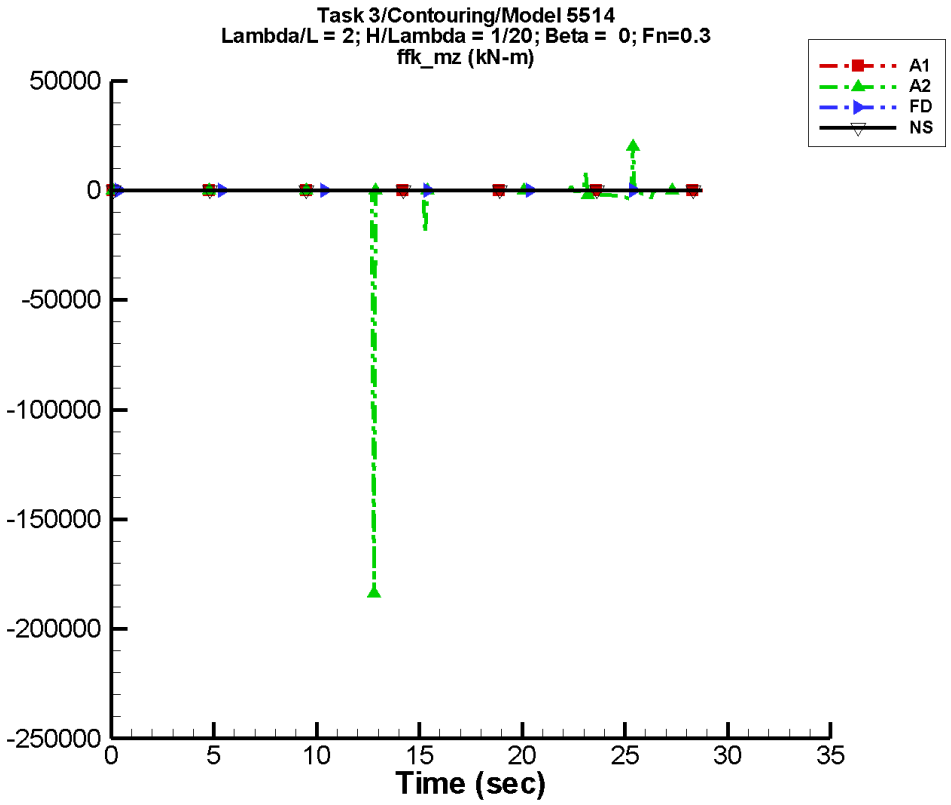
Figure J–74. Time history of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–147. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	9.34	1.11E+04	-94	12.8	-151
A2	-76.1	2.71E+04	-100	1.25E+05	163
FD	32.6	1.20E+04	-104	2.47E+04	-28
L1	0.734	1.15E+04	-98	1.16	90
L3	-20.0	1.03E+04	-98	1.73E+04	-15
L4	-20.0	1.03E+04	-98	1.73E+04	-15
NF	—	—	—	—	—
NS	1.72E+03	1.39E+04	91	9.57E+04	178

Table J–148. Minimum and maximum of of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-1.11E+04	1.11E+04	-1.11E+04	1.10E+04
A2	-1.54E+05	1.54E+05	-1.47E+05	1.47E+05
FD	-3.31E+04	3.41E+04	-8.70E+03	8.86E+03
L1	-1.15E+04	1.15E+04	-1.15E+04	1.14E+04
L3	-2.50E+04	2.50E+04	-2.47E+04	2.47E+04
L4	-2.50E+04	2.50E+04	-2.47E+04	2.47E+04
NF	—	—	—	—
NS	-9.66E+04	9.96E+04	-9.57E+04	9.88E+04



Data identically zero, insufficient, or not available from LAMP-1, LAMP-3, LAMP-4 and NFA.

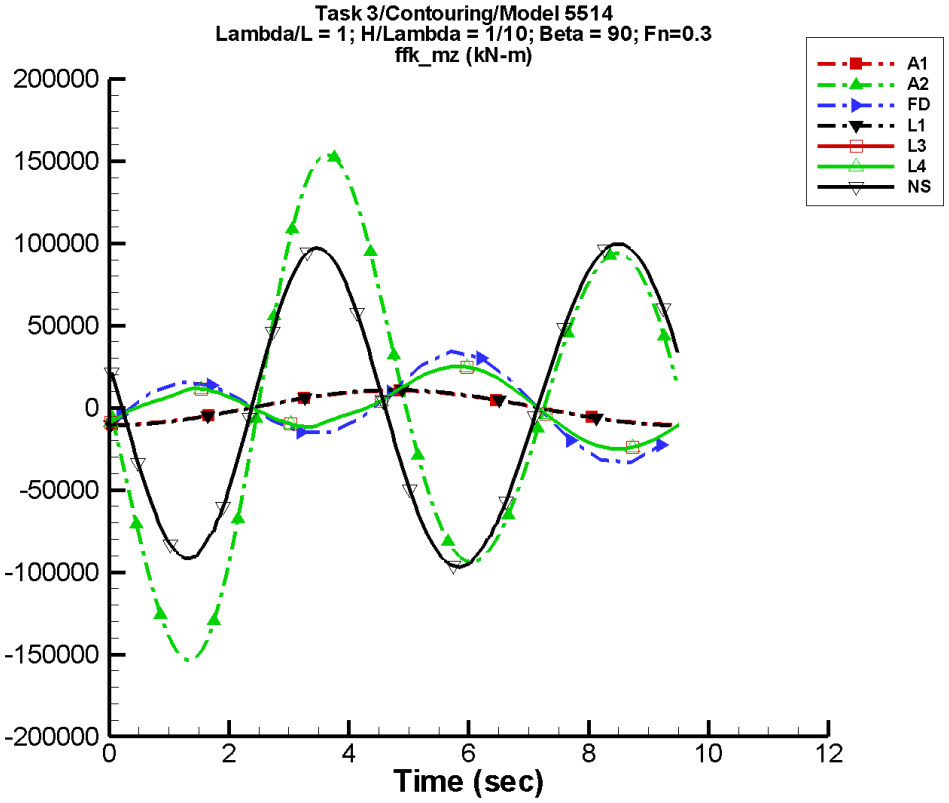
Figure J–75. Time history of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–149. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	5.76E-06	2.38E-02	-93	8.35E-06	-162
A2	-889.	1.15E+03	103	1.35E+03	-49
FD	1.37E-04	3.98E-05	28	7.29E-04	61
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-1.22E-02	8.29E-02	116	4.29E-02	-95

Table J–150. Minimum and maximum of of M_z^{fk} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-2.38E-02	2.38E-02	-2.38E-02	2.38E-02
A2	-1.84E+05	2.01E+04	-2.45E+04	2.09E+03
FD	-1.28E-02	1.02E-02	-3.36E-03	2.91E-03
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.714	0.734	-0.207	0.158



Data identically zero, insufficient, or not available from NFA.

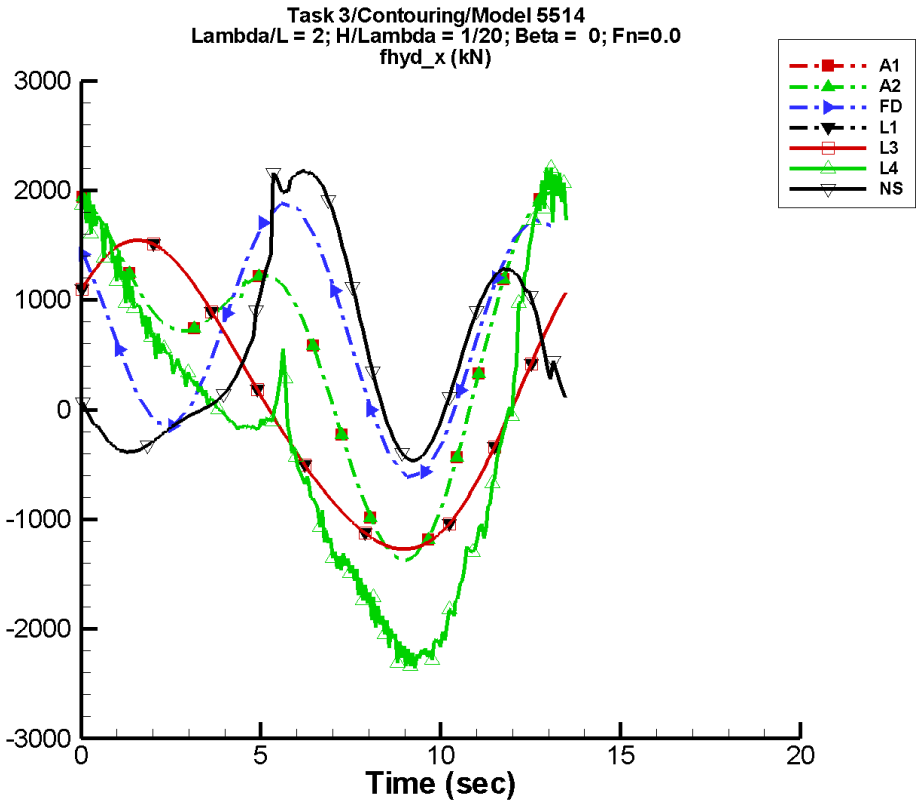
Figure J–76. Time history of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–151. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	8.73	1.04E+04	-94	11.9	-151
A2	-76.1	2.71E+04	-100	1.25E+05	163
FD	33.0	1.20E+04	-104	2.47E+04	-28
L1	0.639	1.08E+04	-98	1.15	90
L3	-20.1	1.03E+04	-98	1.73E+04	-15
L4	-20.1	1.03E+04	-98	1.73E+04	-15
NF	—	—	—	—	—
NS	1.73E+03	1.38E+04	91	9.57E+04	178

Table J–152. Minimum and maximum of of M_z^{fk} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-1.04E+04	1.04E+04	-1.03E+04	1.02E+04
A2	-1.54E+05	1.54E+05	-1.47E+05	1.47E+05
FD	-3.31E+04	3.41E+04	-8.70E+03	8.86E+03
L1	-1.08E+04	1.08E+04	-1.08E+04	1.07E+04
L3	-2.50E+04	2.50E+04	-2.47E+04	2.47E+04
L4	-2.50E+04	2.50E+04	-2.47E+04	2.47E+04
NF	—	—	—	—
NS	-9.68E+04	9.96E+04	-9.60E+04	9.88E+04



Data identically zero, insufficient, or not available from NFA.

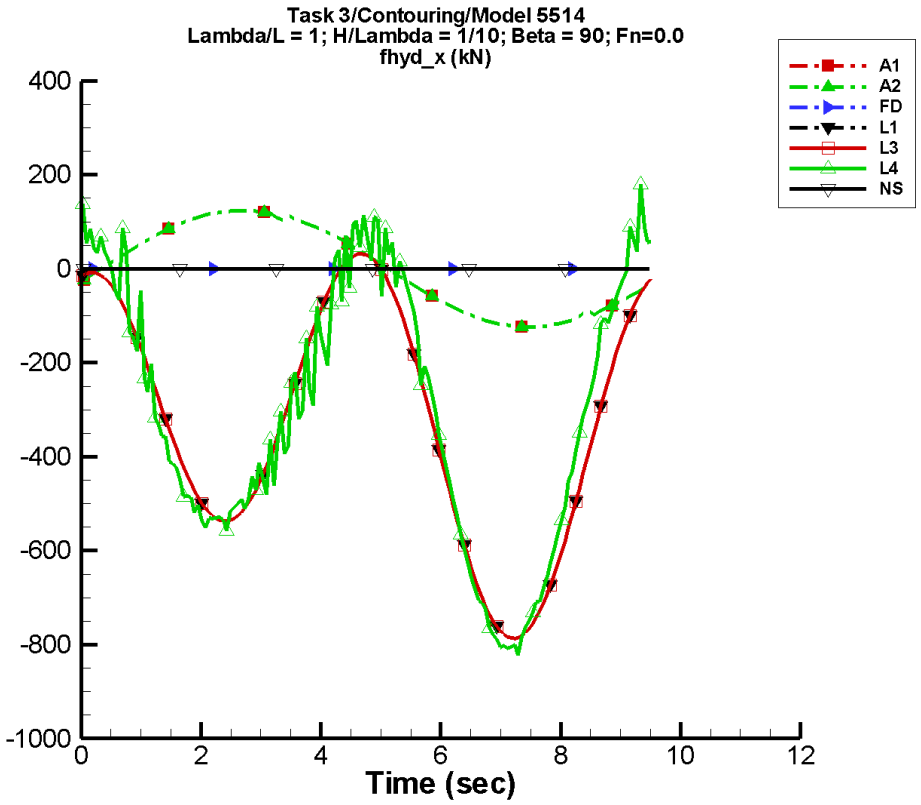
Figure J–77. Time history of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–153. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	563.	1.14E+03	42	867.	131
A2	563.	1.14E+03	42	867.	131
FD	713.	246.	2	1.10E+03	130
L1	73.6	1.39E+03	35	129.	39
L3	73.6	1.39E+03	35	129.	39
L4	-264.	1.63E+03	46	781.	105
NF	—	—	—	—	—
NS	539.	547.	-93	830.	144

Table J–154. Minimum and maximum of of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.37E+03	1.98E+03	-1.34E+03	1.96E+03
A2	-1.37E+03	1.98E+03	-1.34E+03	1.96E+03
FD	-617.	1.88E+03	34.5	1.27E+03
L1	-1.27E+03	1.55E+03	-1.27E+03	1.54E+03
L3	-1.27E+03	1.55E+03	-1.27E+03	1.54E+03
L4	-2.36E+03	2.21E+03	-2.26E+03	2.03E+03
NF	—	—	—	—
NS	-463.	2.18E+03	-447.	2.16E+03



Data identically zero, insufficient, or not available from NFA.

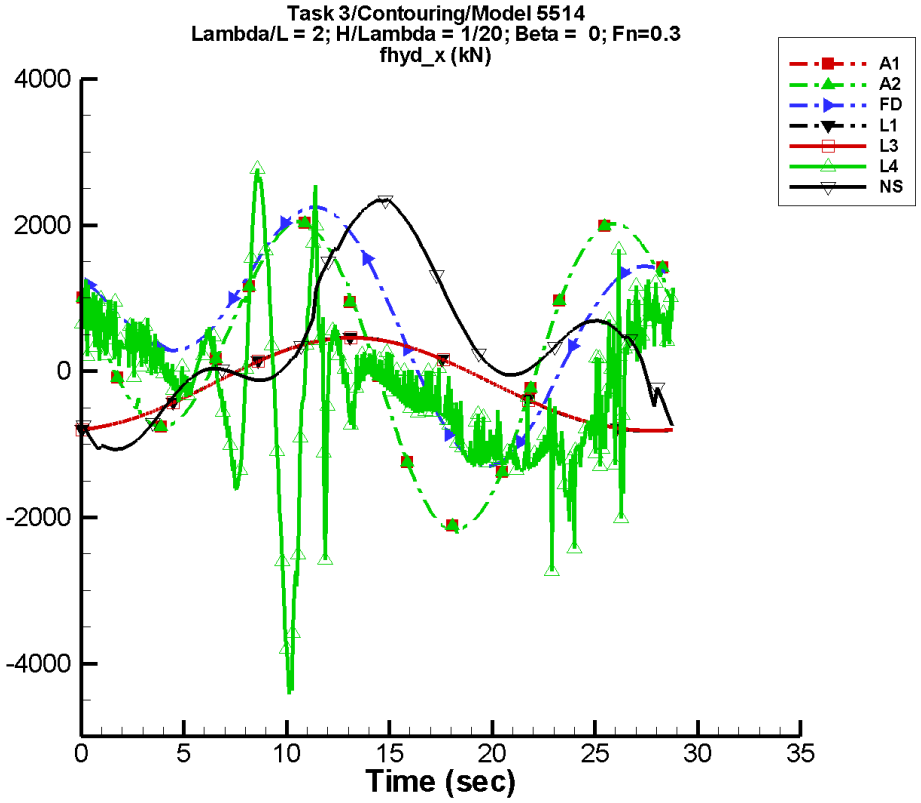
Figure J–78. Time history of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–155. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	0.112	124.	-17	0.161	-126
A2	0.112	124.	-17	0.161	-126
FD	-1.66E-10	3.73E-05	161	1.56E-09	-108
L1	-328.	126.	-18	334.	72
L3	-328.	126.	-18	334.	72
L4	-302.	92.0	-3	369.	75
NF	—	—	—	—	—
NS	-3.38E-05	1.14E-04	-150	1.05E-04	-51

Table J–156. Minimum and maximum of of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-124.	124.	-123.	122.
A2	-124.	124.	-123.	122.
FD	-3.71E-05	3.73E-05	-2.81E-05	2.71E-05
L1	-787.	31.4	-781.	26.2
L3	-787.	31.4	-781.	26.2
L4	-823.	184.	-801.	106.
NF	—	—	—	—
NS	-4.32E-04	2.38E-04	-4.24E-04	2.34E-04



Data identically zero, insufficient, or not available from NFA.

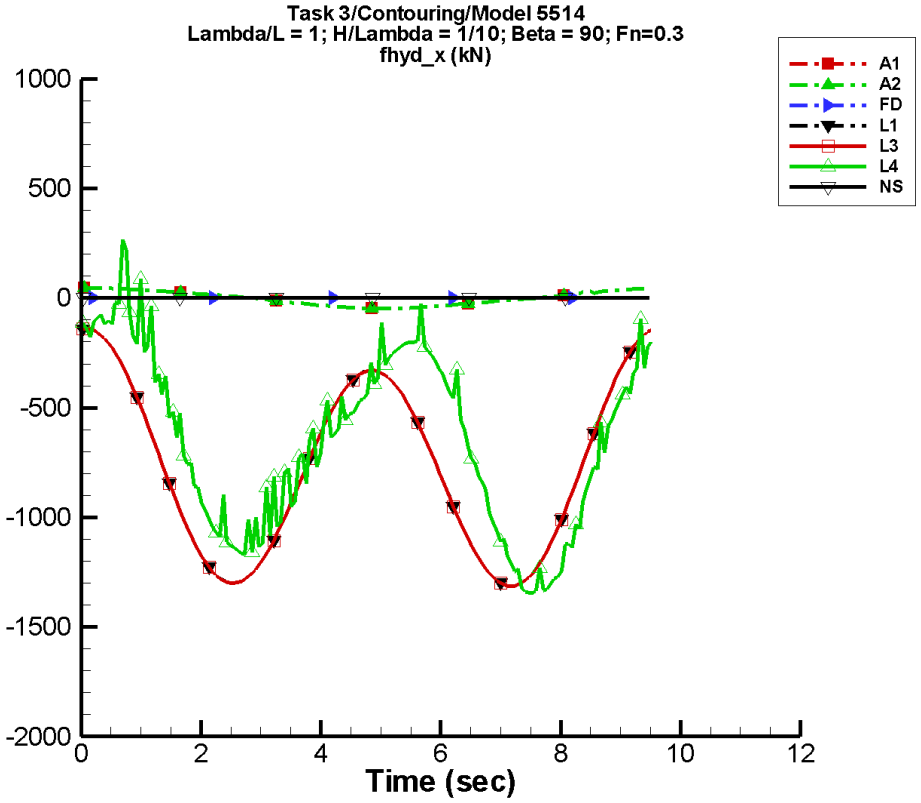
Figure J–79. Time history of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–157. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	254.	704.	41	1.73E+03	170
A2	254.	704.	41	1.73E+03	170
FD	650.	888.	3	1.13E+03	151
L1	-202.	639.	-75	23.6	131
L3	-201.	635.	-76	23.8	132
L4	-276.	566.	34	535.	80
NF	—	—	—	—	—
NS	364.	1.14E+03	-104	386.	136

Table J–158. Minimum and maximum of of F_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-2.22E+03	2.05E+03	-2.15E+03	2.04E+03
A2	-2.22E+03	2.05E+03	-2.15E+03	2.04E+03
FD	-1.30E+03	2.25E+03	-1.13E+03	2.16E+03
L1	-818.	460.	-817.	459.
L3	-813.	456.	-813.	456.
L4	-4.42E+03	2.77E+03	-3.92E+03	2.54E+03
NF	—	—	—	—
NS	-1.46E+03	2.34E+03	-1.44E+03	2.32E+03



Data identically zero, insufficient, or not available from NFA.

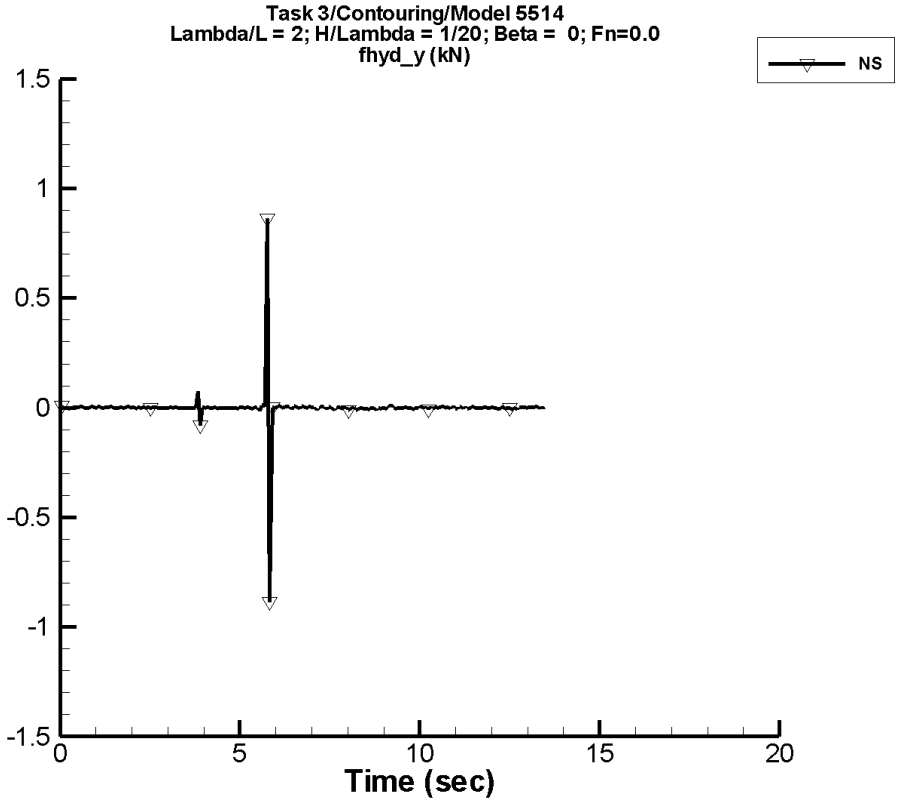
Figure J–80. Time history of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–159. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	-8.07E-02	45.0	72	0.313	-8
A2	-8.07E-02	45.0	72	0.313	-8
FD	-2.23E-10	4.88E-05	126	1.47E-09	-134
L1	-770.	94.8	75	535.	68
L3	-770.	94.8	75	535.	68
L4	-642.	75.0	19	542.	41
NF	—	—	—	—	—
NS	-3.84E-05	1.29E-04	-153	1.07E-04	-52

Table J–160. Minimum and maximum of of F_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-48.3	49.8	-47.5	48.9
A2	-48.3	49.8	-47.5	48.9
FD	-4.83E-05	4.88E-05	-4.67E-05	3.53E-05
L1	-1.31E+03	-140.	-1.31E+03	-140.
L3	-1.31E+03	-140.	-1.31E+03	-140.
L4	-1.34E+03	289.	-1.32E+03	5.02
NF	—	—	—	—
NS	-4.59E-04	2.51E-04	-4.51E-04	2.47E-04



Data identically zero, insufficient, or not available from AEGIR-1, AEGIR-2, FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

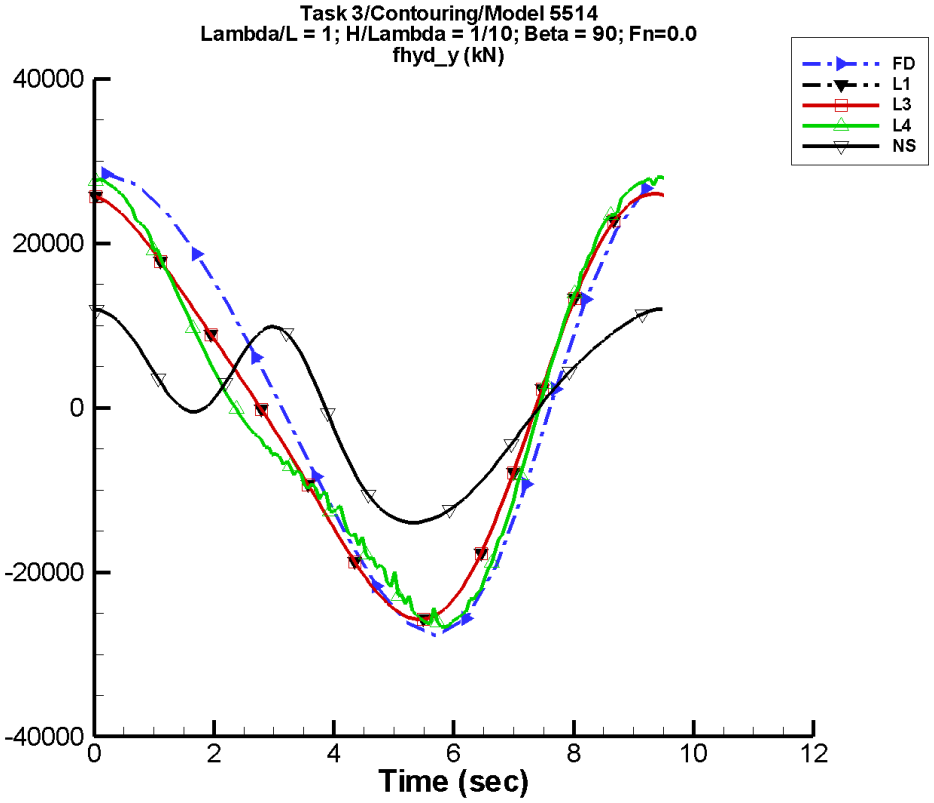
Figure J–81. Time history of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–161. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	—	—	—	—	—
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-2.74E-04	1.12E-03	54	3.42E-04	157

Table J–162. Minimum and maximum of of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	—	—	—	—
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.886	0.864	-2.18E-02	2.07E-02



Data identically zero, insufficient, or not available from AEGIR-1, AEGIR-2 and NFA.

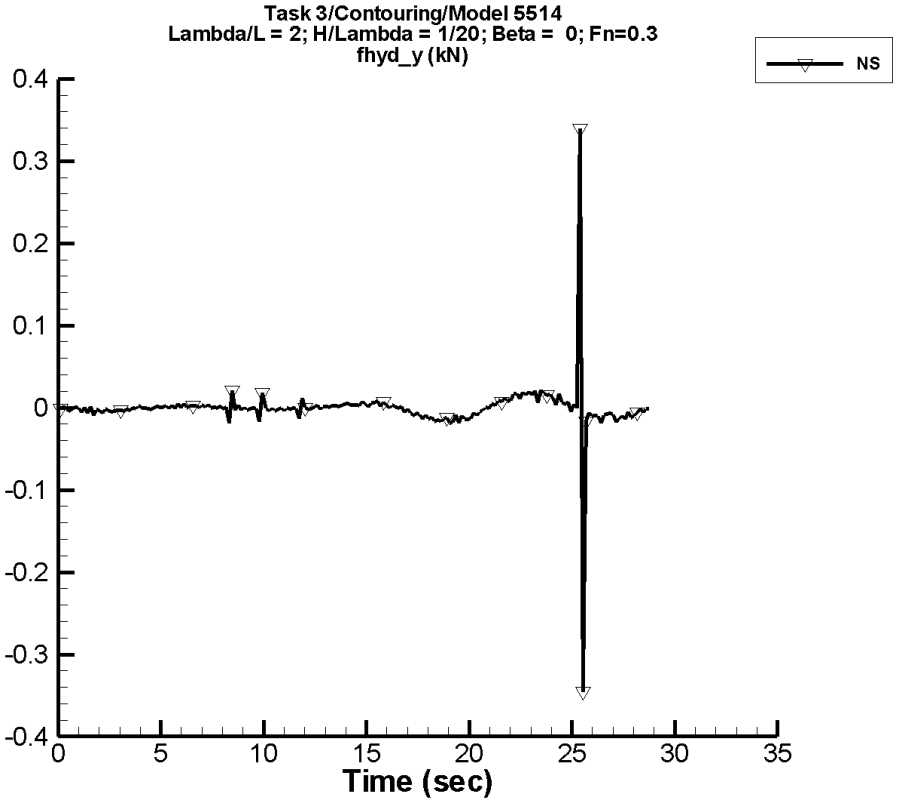
Figure J–82. Time history of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–163. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	—	—	—	—	—
FD	1.45E+03	2.76E+04	54	3.42E+03	128
L1	663.	2.47E+04	72	4.05E+03	153
L3	663.	2.47E+04	72	4.05E+03	153
L4	320.	2.51E+04	73	6.19E+03	124
NF	—	—	—	—	—
NS	478.	9.91E+03	68	5.80E+03	180

Table J–164. Minimum and maximum of of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	—	—	—	—
FD	-2.78E+04	2.84E+04	-1.84E+04	2.73E+04
L1	-2.58E+04	2.60E+04	-2.56E+04	2.59E+04
L3	-2.58E+04	2.60E+04	-2.56E+04	2.59E+04
L4	-2.67E+04	2.81E+04	-2.61E+04	2.78E+04
NF	—	—	—	—
NS	-1.40E+04	1.20E+04	-1.39E+04	1.20E+04



Data identically zero, insufficient, or not available from AEGIR-1, AEGIR-2, FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

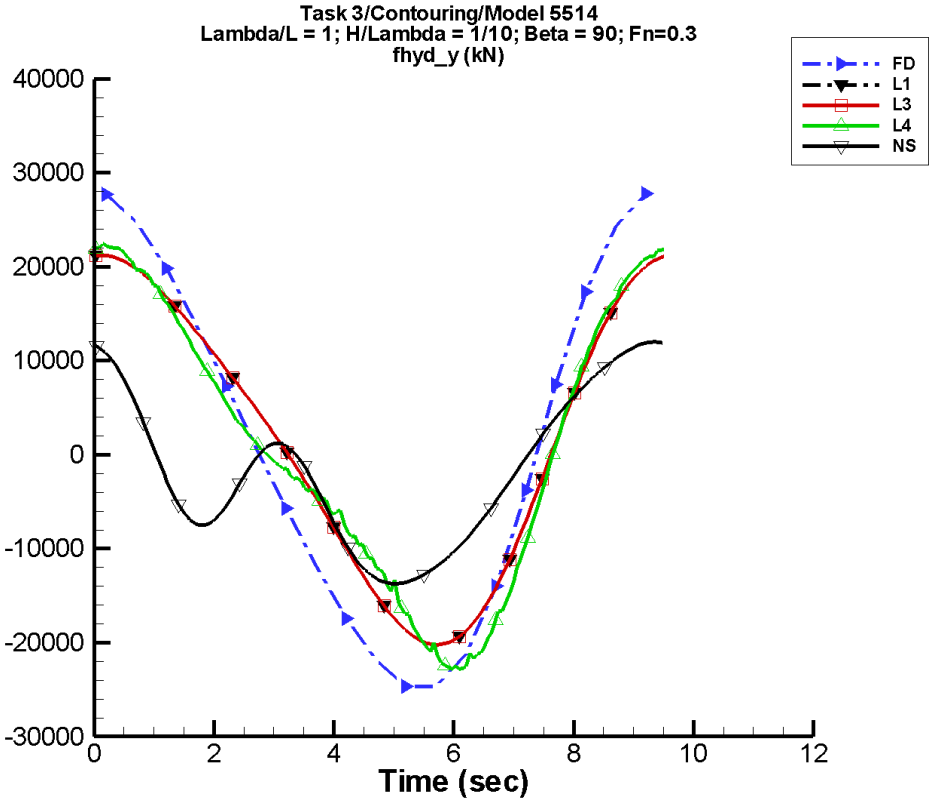
Figure J–83. Time history of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–165. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	—	—	—	—	—
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-2.13E-04	8.29E-04	58	2.66E-03	-136

Table J–166. Minimum and maximum of of F_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	—	—	—	—
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.345	0.339	-1.88E-02	1.74E-02



Data identically zero, insufficient, or not available from AEGIR-1, AEGIR-2 and NFA.

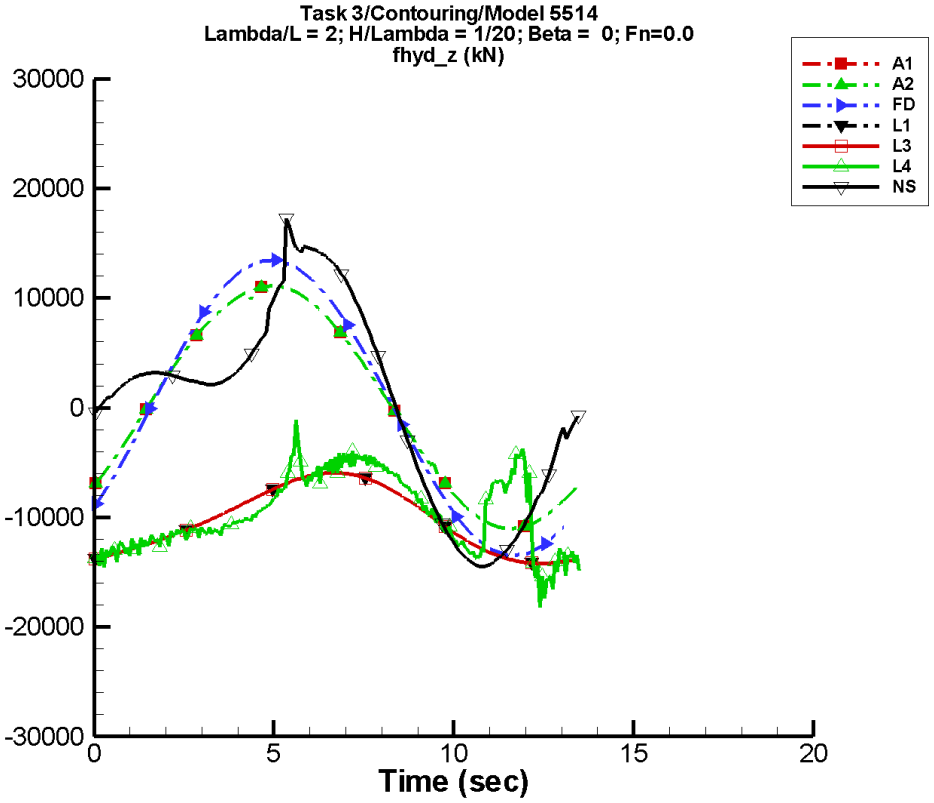
Figure J–84. Time history of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–167. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	—	—	—	—	—
A2	—	—	—	—	—
FD	1.44E+03	2.60E+04	65	3.42E+03	128
L1	1.35E+03	1.99E+04	60	3.16E+03	138
L3	1.35E+03	1.99E+04	60	3.16E+03	138
L4	703.	1.99E+04	60	5.33E+03	116
NF	—	—	—	—	—
NS	-1.66E+03	9.83E+03	98	5.29E+03	164

Table J–168. Minimum and maximum of of F_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	—	—	—	—
A2	—	—	—	—
FD	-2.47E+04	2.78E+04	-1.73E+04	2.51E+04
L1	-2.02E+04	2.12E+04	-2.01E+04	2.13E+04
L3	-2.02E+04	2.12E+04	-2.01E+04	2.13E+04
L4	-2.28E+04	2.25E+04	-2.25E+04	2.22E+04
NF	—	—	—	—
NS	-1.37E+04	1.20E+04	-1.37E+04	1.19E+04



Data identically zero, insufficient, or not available from NFA.

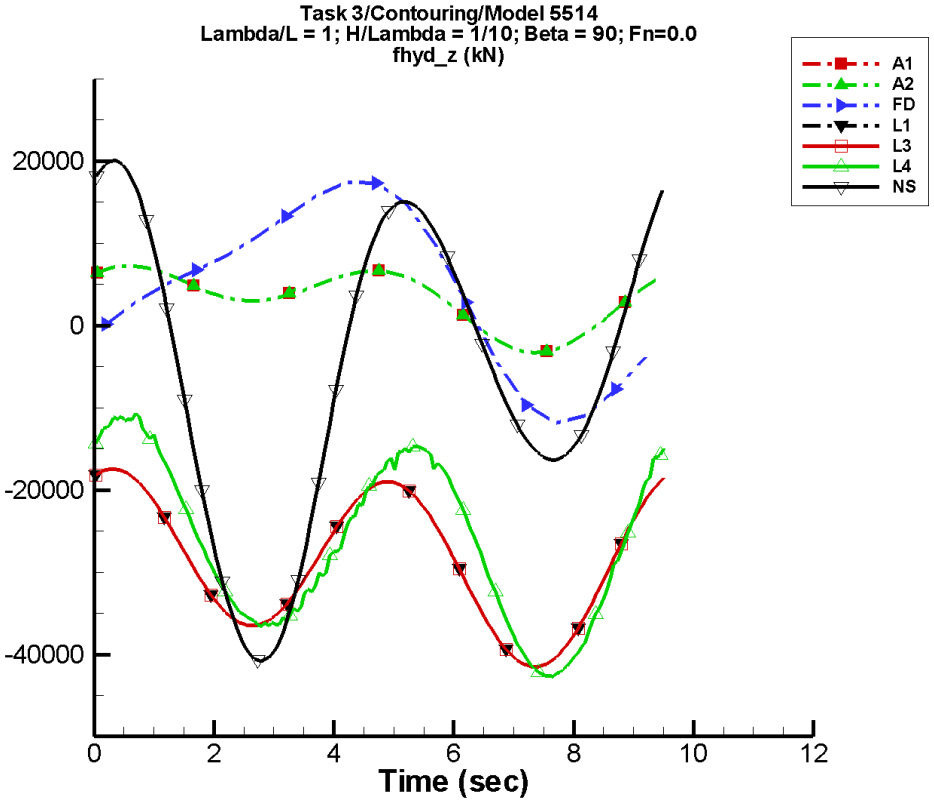
Figure J–85. Time history of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–169. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.0$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	95.3	1.10E+04	-45	72.7	35
A2	95.3	1.10E+04	-45	72.7	35
FD	-0.697	1.36E+04	-47	16.2	-37
L1	-1.04E+04	4.00E+03	-84	583.	44
L3	-1.04E+04	4.00E+03	-84	583.	44
L4	-9.63E+03	3.66E+03	-106	806.	88
NF	—	—	—	—	—
NS	471.	1.07E+04	-39	5.95E+03	79

Table J–170. Minimum and maximum of of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.0$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-1.10E+04	1.11E+04	-1.10E+04	1.10E+04
A2	-1.10E+04	1.11E+04	-1.10E+04	1.10E+04
FD	-1.35E+04	1.35E+04	-1.16E+04	1.17E+04
L1	-1.42E+04	-5.94E+03	-1.42E+04	-5.95E+03
L3	-1.42E+04	-5.94E+03	-1.42E+04	-5.95E+03
L4	-1.82E+04	-218.	-1.61E+04	-4.37E+03
NF	—	—	—	—
NS	-1.45E+04	1.72E+04	-1.44E+04	1.50E+04



Data identically zero, insufficient, or not available from NFA.

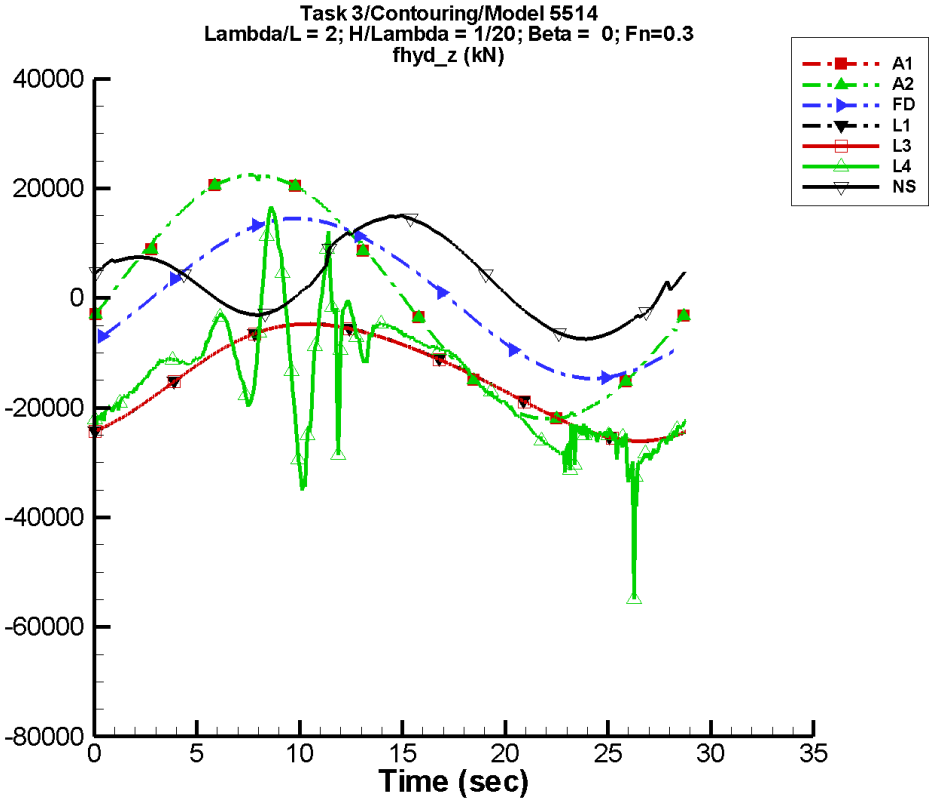
Figure J–86. Time history of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–171. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	3.24E+03	3.11E+03	-9	3.37E+03	63
A2	3.24E+03	3.11E+03	-9	3.37E+03	63
FD	4.00E+03	1.29E+04	-61	4.19E+03	40
L1	-2.87E+04	2.62E+03	1	1.03E+04	58
L3	-2.87E+04	2.62E+03	1	1.03E+04	58
L4	-2.63E+04	2.55E+03	10	1.31E+04	38
NF	—	—	—	—	—
NS	-5.65E+03	1.00E+04	160	2.33E+04	60

Table J–172. Minimum and maximum of of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-3.29E+03	7.24E+03	-3.10E+03	7.08E+03
A2	-3.29E+03	7.24E+03	-3.10E+03	7.08E+03
FD	-1.19E+04	1.74E+04	-5.31E+03	1.59E+04
L1	-4.15E+04	-1.75E+04	-4.13E+04	-1.76E+04
L3	-4.15E+04	-1.75E+04	-4.13E+04	-1.76E+04
L4	-4.27E+04	-1.07E+04	-4.23E+04	-1.13E+04
NF	—	—	—	—
NS	-4.08E+04	2.01E+04	-4.05E+04	1.97E+04



Data identically zero, insufficient, or not available from NFA.

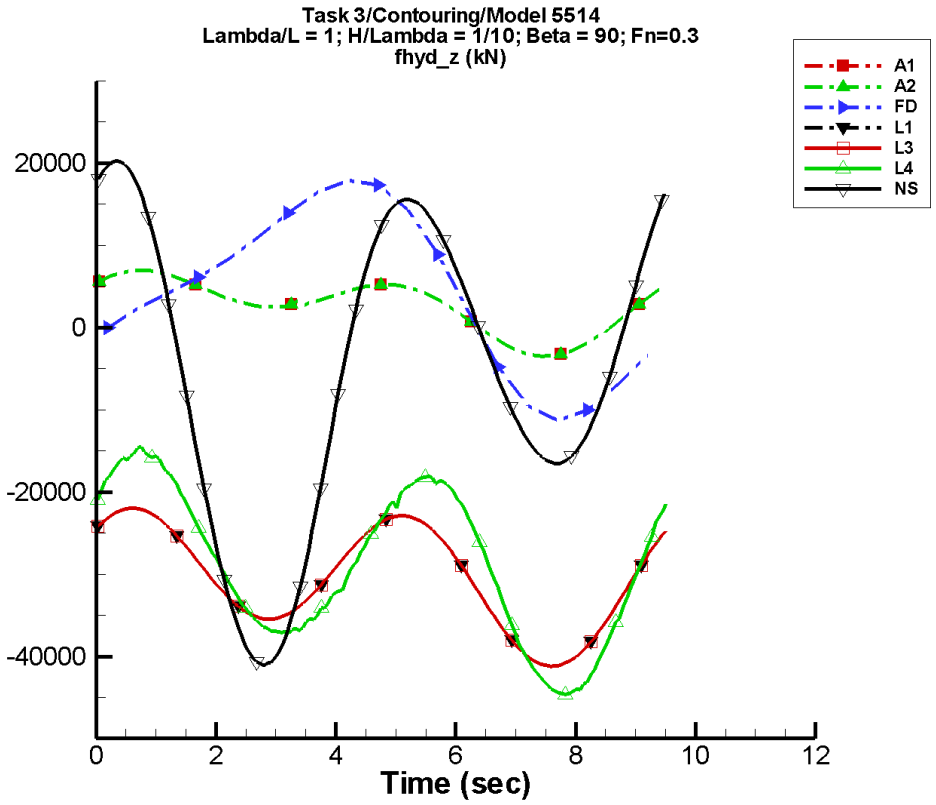
Figure J–87. Time history of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–173. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	148.	2.21E+04	-9	158.	170
A2	148.	2.21E+04	-9	158.	170
FD	2.50	1.45E+04	-32	37.7	-23
L1	-1.49E+04	1.05E+04	-53	1.13E+03	-78
L3	-1.49E+04	1.05E+04	-53	1.13E+03	-78
L4	-1.51E+04	1.12E+04	-44	2.72E+03	7
NF	—	—	—	—	—
NS	3.46E+03	5.05E+03	-62	8.02E+03	56

Table J–174. Minimum and maximum of of F_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-2.20E+04	2.28E+04	-2.20E+04	2.24E+04
A2	-2.20E+04	2.28E+04	-2.20E+04	2.24E+04
FD	-1.46E+04	1.45E+04	-1.42E+04	1.44E+04
L1	-2.61E+04	-4.69E+03	-2.61E+04	-4.70E+03
L3	-2.61E+04	-4.72E+03	-2.61E+04	-4.73E+03
L4	-5.48E+04	1.67E+04	-3.52E+04	1.50E+04
NF	—	—	—	—
NS	-7.45E+03	1.50E+04	-7.36E+03	1.48E+04



Data identically zero, insufficient, or not available from NFA.

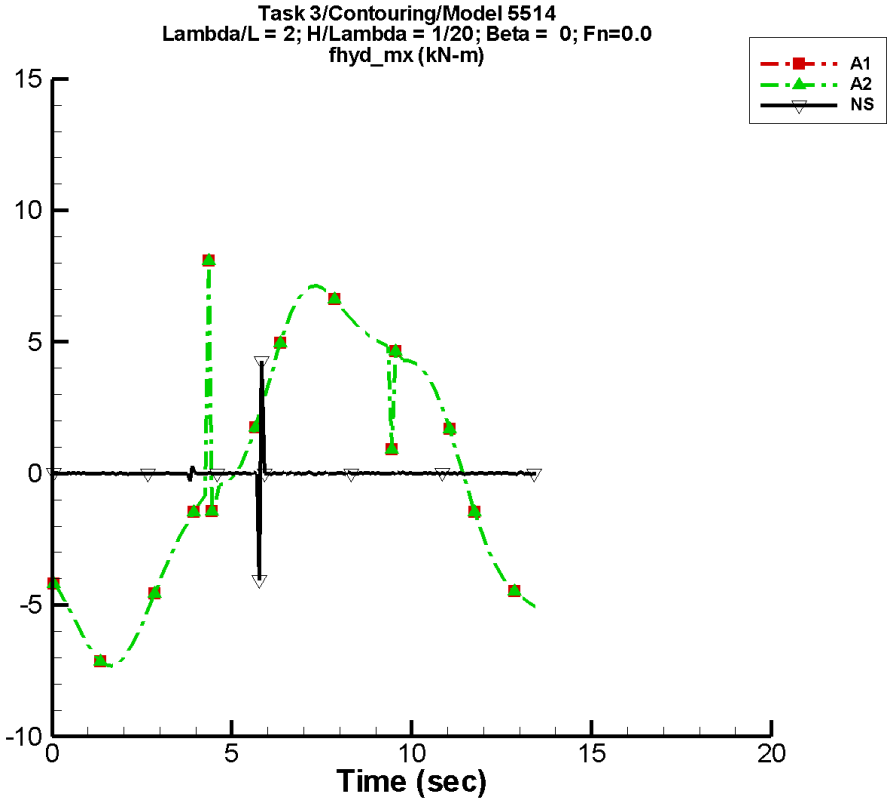
Figure J–88. Time history of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–175. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN)	a_1 (kN)	Φ_1 (deg)	a_2 (kN)	Φ_2 (deg)
A1	2.63E+03	3.07E+03	-4	3.12E+03	49
A2	2.63E+03	3.07E+03	-4	3.12E+03	49
FD	4.00E+03	1.28E+04	-60	3.95E+03	52
L1	-3.05E+04	2.91E+03	-16	7.88E+03	39
L3	-3.05E+04	2.91E+03	-16	7.88E+03	39
L4	-2.89E+04	3.08E+03	-6	1.19E+04	22
NF	—	—	—	—	—
NS	-5.53E+03	9.95E+03	160	2.36E+04	58

Table J–176. Minimum and maximum of of F_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN)	Maximum (kN)	Minimum (kN)	Maximum (kN)
A1	-3.48E+03	6.95E+03	-3.30E+03	6.82E+03
A2	-3.48E+03	6.95E+03	-3.30E+03	6.82E+03
FD	-1.13E+04	1.79E+04	-5.23E+03	1.64E+04
L1	-4.12E+04	-2.20E+04	-4.11E+04	-2.21E+04
L3	-4.12E+04	-2.20E+04	-4.11E+04	-2.21E+04
L4	-4.46E+04	-1.43E+04	-4.44E+04	-1.53E+04
NF	—	—	—	—
NS	-4.11E+04	2.02E+04	-4.07E+04	1.99E+04



Data identically zero, insufficient, or not available from FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

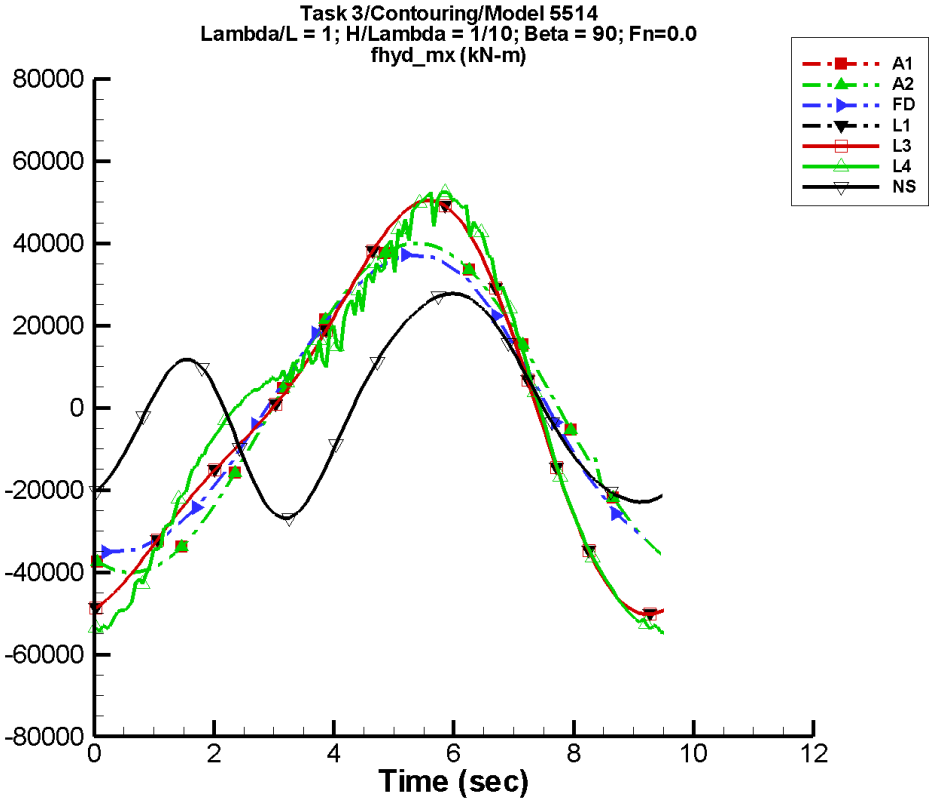
Figure J–89. Time history of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–177. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	1.39E-02	6.42	-128	5.98E-02	118
A2	1.39E-02	6.42	-128	5.98E-02	118
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	1.97E-03	3.57E-03	-119	1.86E-03	108

Table J–178. Minimum and maximum of of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-9.36	8.09	-7.19	7.02
A2	-9.36	8.09	-7.19	7.02
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-4.06	4.28	-9.31E-02	0.119



Data identically zero, insufficient, or not available from NFA.

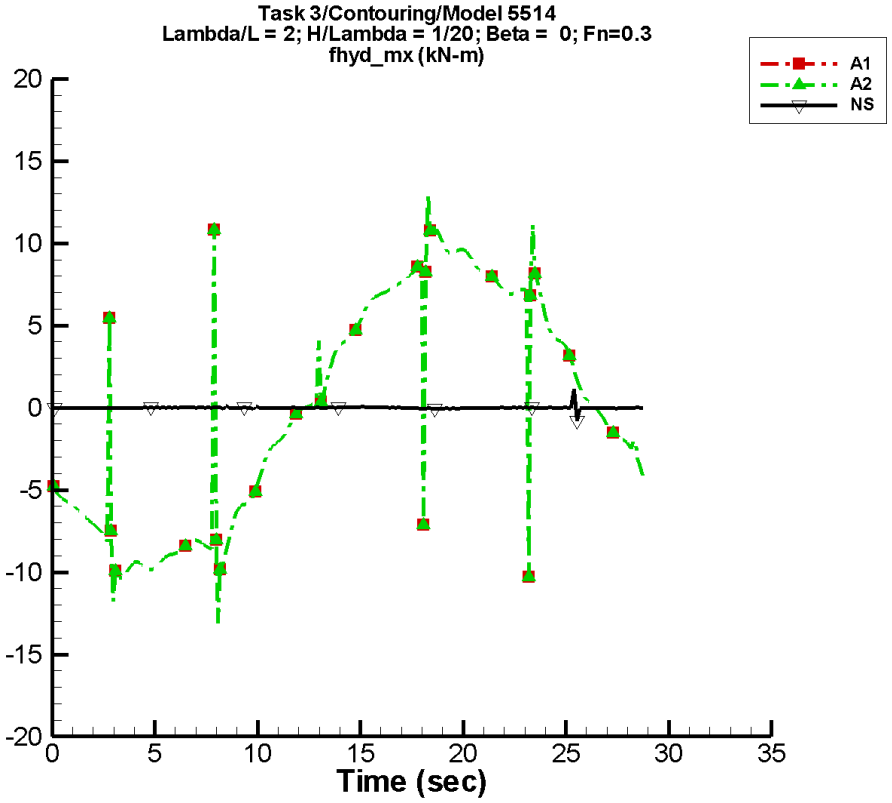
Figure J–90. Time history of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–179. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	45.9	3.99E+04	-117	81.0	-168
A2	45.9	3.99E+04	-117	81.0	-168
FD	26.5	3.66E+04	-122	1.72E+03	-25
L1	-1.87E+03	4.59E+04	-110	1.13E+04	-27
L3	-1.87E+03	4.59E+04	-110	1.13E+04	-27
L4	-1.48E+03	4.61E+04	-109	1.42E+04	-53
NF	—	—	—	—	—
NS	-1.28E+03	1.38E+04	-126	1.96E+04	-12

Table J–180. Minimum and maximum of of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-4.01E+04	4.00E+04	-3.96E+04	3.96E+04
A2	-4.01E+04	4.00E+04	-3.96E+04	3.96E+04
FD	-3.51E+04	3.71E+04	-3.43E+04	2.65E+04
L1	-5.02E+04	5.03E+04	-4.99E+04	5.00E+04
L3	-5.02E+04	5.03E+04	-4.99E+04	5.00E+04
L4	-5.47E+04	5.25E+04	-5.38E+04	5.09E+04
NF	—	—	—	—
NS	-2.69E+04	2.78E+04	-2.65E+04	2.76E+04



Data identically zero, insufficient, or not available from FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

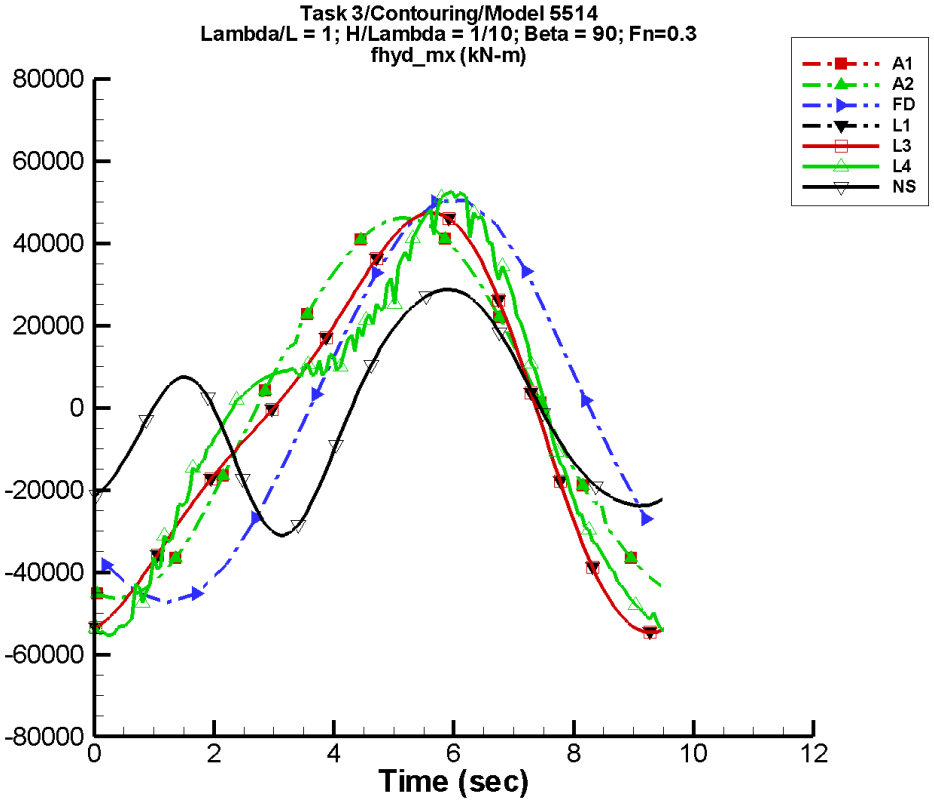
Figure J–91. Time history of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–181. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-5.72E-02	9.18	-154	9.12E-02	33
A2	-5.72E-02	9.18	-154	9.12E-02	33
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-1.48E-03	6.63E-03	19	9.21E-03	125

Table J–182. Minimum and maximum of of M_x^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-13.6	13.0	-10.4	10.5
A2	-13.6	13.0	-10.4	10.5
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-0.814	1.11	-5.44E-02	5.51E-02



Data identically zero, insufficient, or not available from NFA.

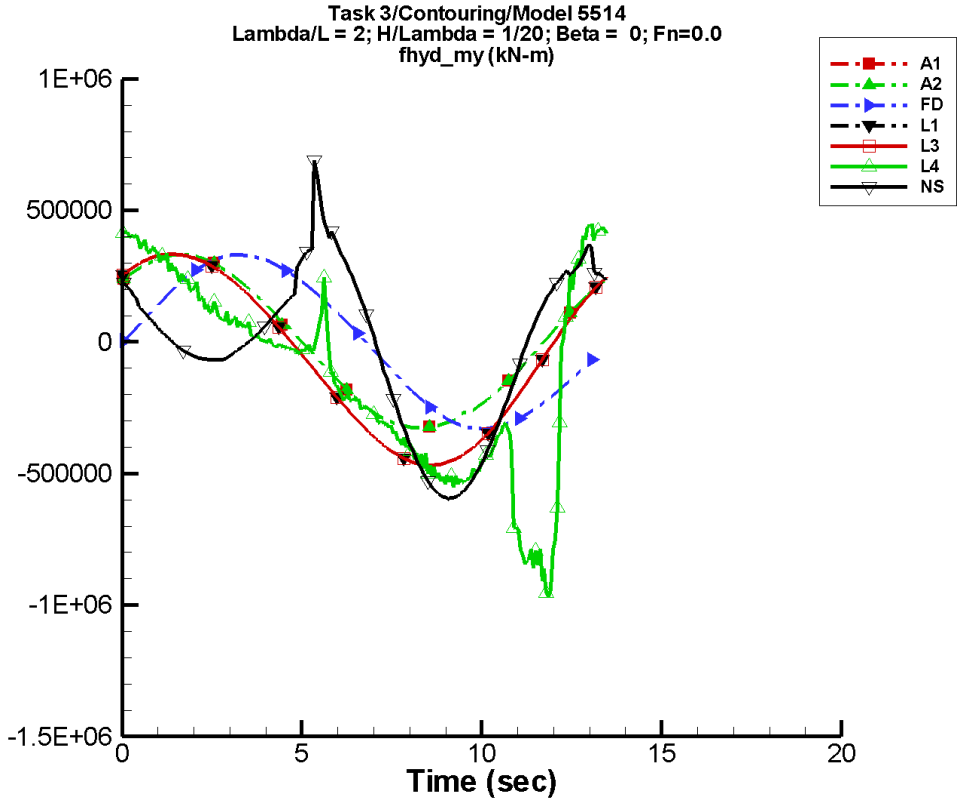
Figure J–92. Time history of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–183. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	4.34	4.58E+04	-108	96.4	-138
A2	4.34	4.58E+04	-108	96.4	-138
FD	26.4	4.90E+04	-149	1.72E+03	-25
L1	-4.10E+03	4.66E+04	-110	1.12E+04	-36
L3	-4.10E+03	4.66E+04	-110	1.12E+04	-36
L4	-2.03E+03	4.41E+04	-113	1.57E+04	-68
NF	—	—	—	—	—
NS	-2.79E+03	1.61E+04	-129	1.97E+04	-6

Table J–184. Minimum and maximum of of M_x^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-4.62E+04	4.62E+04	-4.58E+04	4.56E+04
A2	-4.62E+04	4.62E+04	-4.58E+04	4.56E+04
FD	-4.74E+04	5.04E+04	-4.36E+04	3.51E+04
L1	-5.47E+04	4.74E+04	-5.44E+04	4.71E+04
L3	-5.47E+04	4.74E+04	-5.44E+04	4.71E+04
L4	-5.53E+04	5.26E+04	-5.46E+04	5.10E+04
NF	—	—	—	—
NS	-3.10E+04	2.88E+04	-3.06E+04	2.86E+04



Data identically zero, insufficient, or not available from NFA.

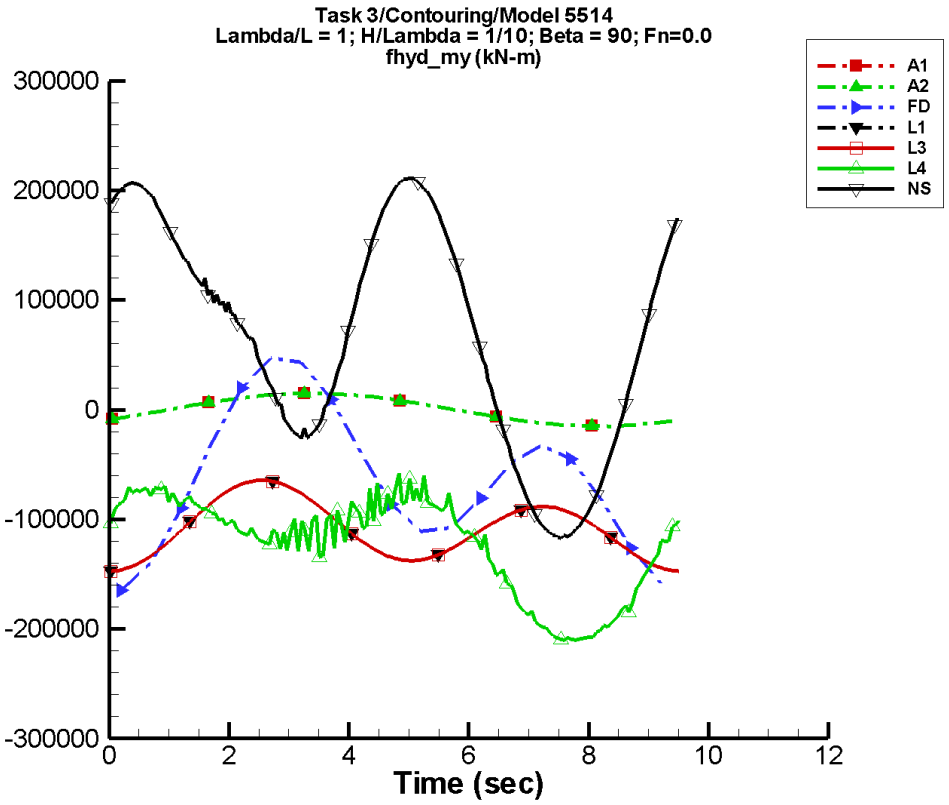
Figure J–93. Time history of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–185. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	227.	3.27E+05	43	449.	-75
A2	227.	3.27E+05	43	449.	-75
FD	-339.	3.28E+05	-5	1.08E+03	-94
L1	-5.91E+04	3.99E+05	41	2.22E+04	104
L3	-5.91E+04	3.99E+05	41	2.22E+04	104
L4	-1.31E+05	4.08E+05	25	1.79E+05	64
NF	—	—	—	—	—
NS	-1.33E+04	2.35E+05	19	3.30E+05	141

Table J–186. Minimum and maximum of of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-3.27E+05	3.32E+05	-3.25E+05	3.29E+05
A2	-3.27E+05	3.32E+05	-3.25E+05	3.29E+05
FD	-3.33E+05	3.31E+05	-2.83E+05	2.80E+05
L1	-4.68E+05	3.33E+05	-4.67E+05	3.33E+05
L3	-4.68E+05	3.33E+05	-4.67E+05	3.33E+05
L4	-9.69E+05	4.49E+05	-8.92E+05	4.28E+05
NF	—	—	—	—
NS	-5.97E+05	6.90E+05	-5.90E+05	5.01E+05



Data identically zero, insufficient, or not available from NFA.

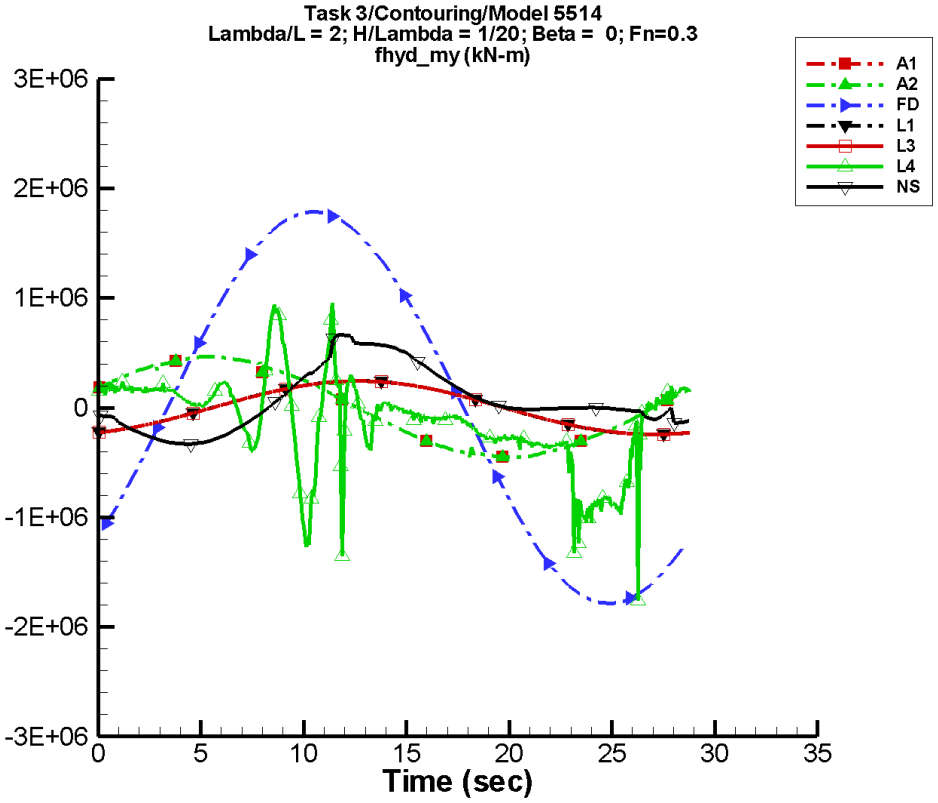
Figure J–94. Time history of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–187. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	12.8	1.48E+04	-42	19.4	-132
A2	12.8	1.48E+04	-42	19.4	-132
FD	-6.44E+04	5.37E+04	-60	6.94E+04	-142
L1	-1.09E+05	1.29E+04	-34	3.28E+04	-115
L3	-1.09E+05	1.29E+04	-34	3.28E+04	-115
L4	-1.22E+05	4.30E+04	-28	4.34E+04	33
NF	—	—	—	—	—
NS	6.76E+04	5.57E+04	-7	1.26E+05	55

Table J–188. Minimum and maximum of of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-1.51E+04	1.51E+04	-1.47E+04	1.48E+04
A2	-1.51E+04	1.51E+04	-1.47E+04	1.48E+04
FD	-1.66E+05	4.75E+04	-1.22E+05	-3.32E+03
L1	-1.47E+05	-6.42E+04	-1.47E+05	-6.47E+04
L3	-1.47E+05	-6.42E+04	-1.47E+05	-6.47E+04
L4	-2.10E+05	-5.80E+04	-2.09E+05	-7.29E+04
NF	—	—	—	—
NS	-1.17E+05	2.11E+05	-1.15E+05	2.09E+05



Data identically zero, insufficient, or not available from NFA.

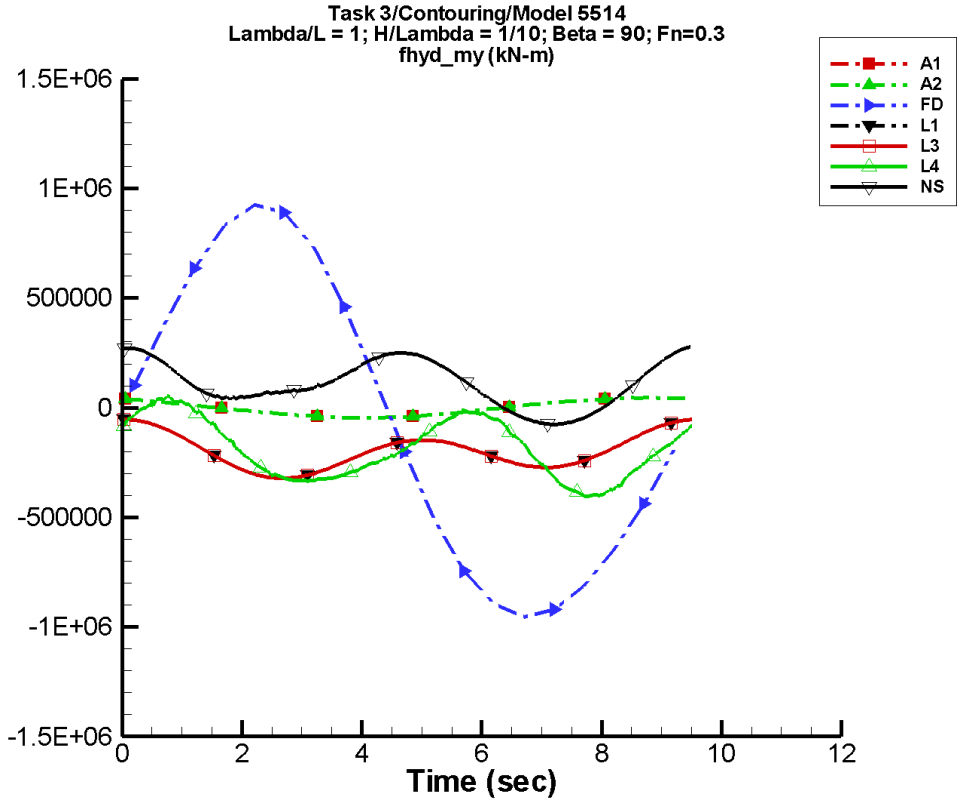
Figure J–95. Time history of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–189. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	897.	4.50E+05	21	1.80E+03	-149
A2	897.	4.50E+05	21	1.80E+03	-149
FD	335.	1.79E+06	-39	2.80E+03	-162
L1	-3.00E+03	2.44E+05	-68	3.08E+03	126
L3	-2.89E+03	2.43E+05	-68	3.08E+03	129
L4	-1.25E+05	2.79E+05	0	2.25E+05	38
NF	—	—	—	—	—
NS	6.78E+04	3.14E+05	-95	2.12E+05	132

Table J–190. Minimum and maximum of of M_y^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-4.53E+05	4.68E+05	-4.52E+05	4.67E+05
A2	-4.53E+05	4.68E+05	-4.52E+05	4.67E+05
FD	-1.79E+06	1.79E+06	-1.73E+06	1.81E+06
L1	-2.44E+05	2.45E+05	-2.44E+05	2.44E+05
L3	-2.43E+05	2.43E+05	-2.43E+05	2.43E+05
L4	-1.76E+06	9.57E+05	-1.12E+06	8.64E+05
NF	—	—	—	—
NS	-3.31E+05	6.63E+05	-3.28E+05	6.39E+05



Data identically zero, insufficient, or not available from NFA.

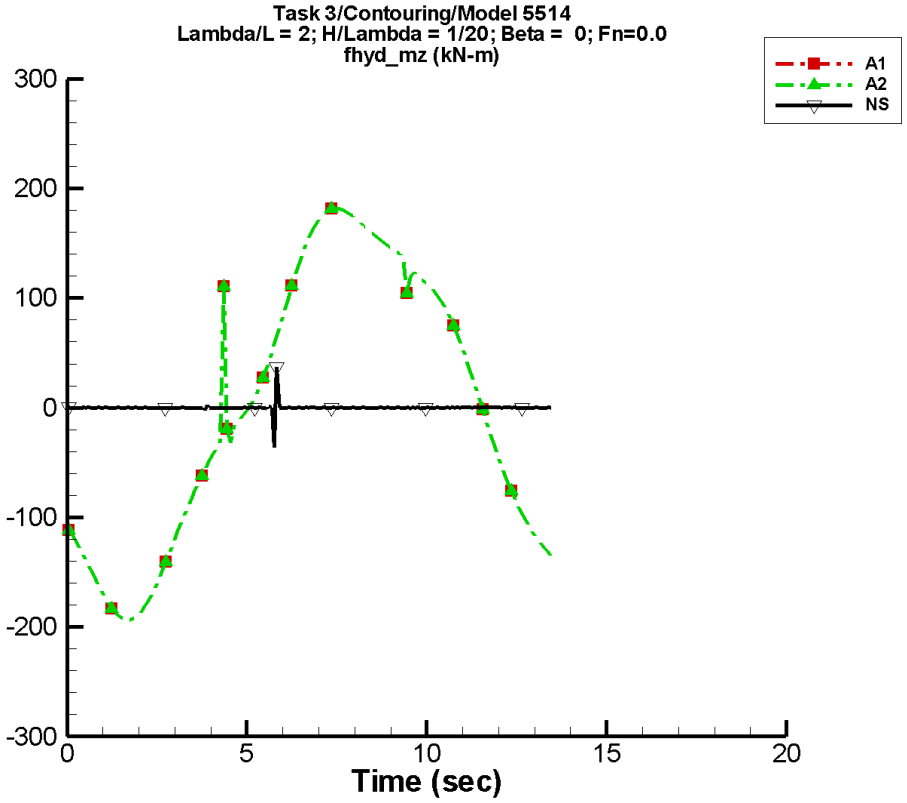
Figure J–96. Time history of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–191. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-58.9	4.56E+04	115	124.	-6
A2	-58.9	4.56E+04	115	124.	-6
FD	-6.49E+04	9.30E+05	-7	7.54E+04	-147
L1	-1.98E+05	5.30E+04	106	9.64E+04	66
L3	-1.98E+05	5.30E+04	106	9.64E+04	66
L4	-1.88E+05	2.72E+04	50	1.77E+05	16
NF	—	—	—	—	—
NS	1.11E+05	5.14E+04	1	1.36E+05	93

Table J–192. Minimum and maximum of of M_y^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-4.58E+04	4.96E+04	-4.53E+04	4.50E+04
A2	-4.58E+04	4.96E+04	-4.53E+04	4.50E+04
FD	-9.54E+05	9.26E+05	-7.31E+05	6.12E+05
L1	-3.22E+05	-5.39E+04	-3.20E+05	-5.40E+04
L3	-3.22E+05	-5.40E+04	-3.21E+05	-5.40E+04
L4	-4.04E+05	5.38E+04	-3.97E+05	3.64E+04
NF	—	—	—	—
NS	-7.61E+04	2.82E+05	-7.42E+04	2.80E+05



Data identically zero, insufficient, or not available from FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

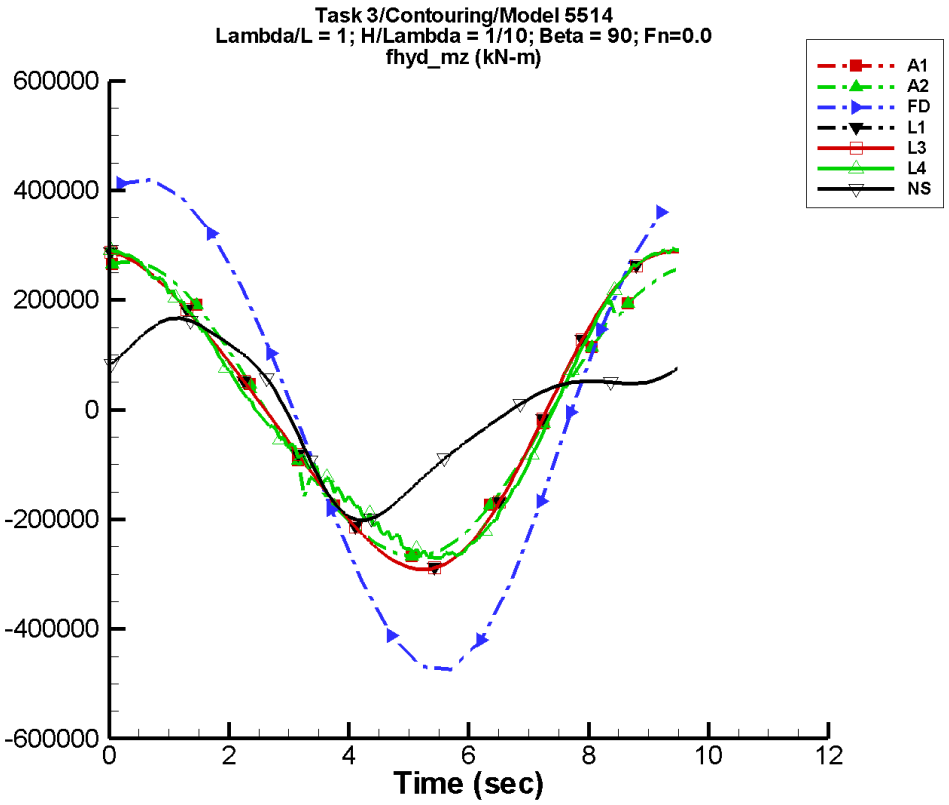
Figure J–97. Time history of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–193. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	0.593	172.	-131	1.42	124
A2	0.593	172.	-131	1.42	124
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	2.73E-02	5.37E-02	138	6.70E-02	157

Table J–194. Minimum and maximum of of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-260.	182.	-191.	180.
A2	-260.	182.	-191.	180.
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-35.9	36.9	-0.860	0.976



Data identically zero, insufficient, or not available from NFA.

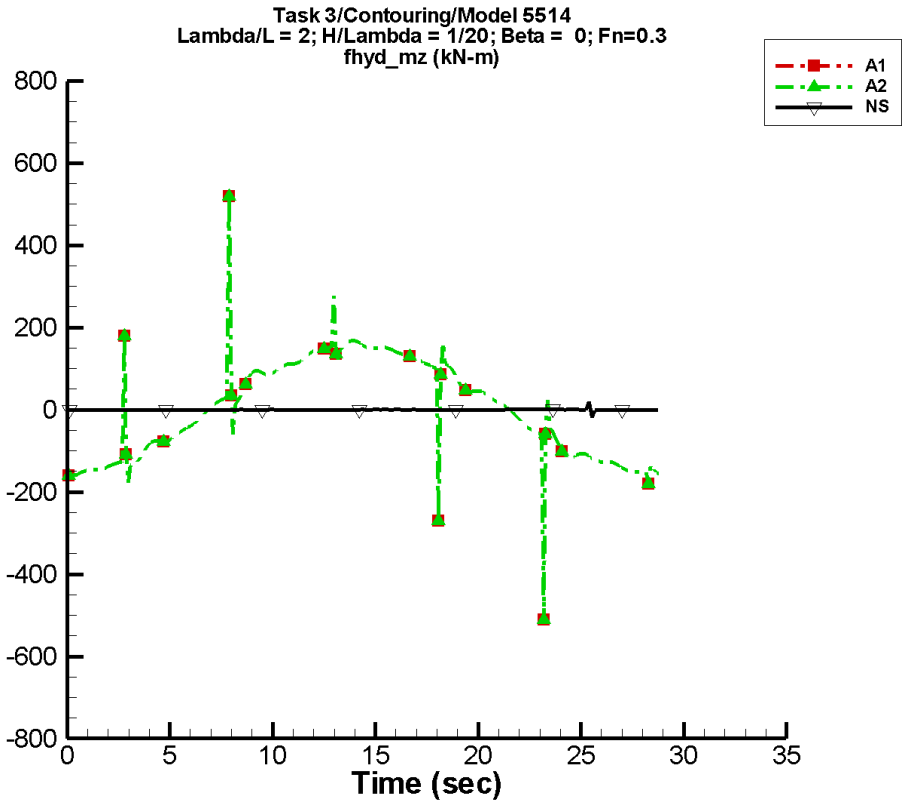
Figure J–98. Time history of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–195. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	62.4	2.69E+05	76	679.	55
A2	62.4	2.69E+05	76	679.	55
FD	-6.19E+03	4.51E+05	52	2.68E+04	166
L1	2.21E+03	2.84E+05	76	3.05E+04	158
L3	2.21E+03	2.84E+05	76	3.05E+04	158
L4	3.71E+03	2.72E+05	74	4.15E+04	126
NF	—	—	—	—	—
NS	4.98E+03	1.37E+05	81	6.95E+04	-47

Table J–196. Minimum and maximum of of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-2.67E+05	2.70E+05	-2.64E+05	2.68E+05
A2	-2.67E+05	2.70E+05	-2.64E+05	2.68E+05
FD	-4.74E+05	4.20E+05	-3.29E+05	4.17E+05
L1	-2.92E+05	2.89E+05	-2.90E+05	2.88E+05
L3	-2.92E+05	2.89E+05	-2.90E+05	2.88E+05
L4	-2.71E+05	2.94E+05	-2.67E+05	2.92E+05
NF	—	—	—	—
NS	-2.02E+05	1.67E+05	-2.00E+05	1.66E+05



Data identically zero, insufficient, or not available from FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

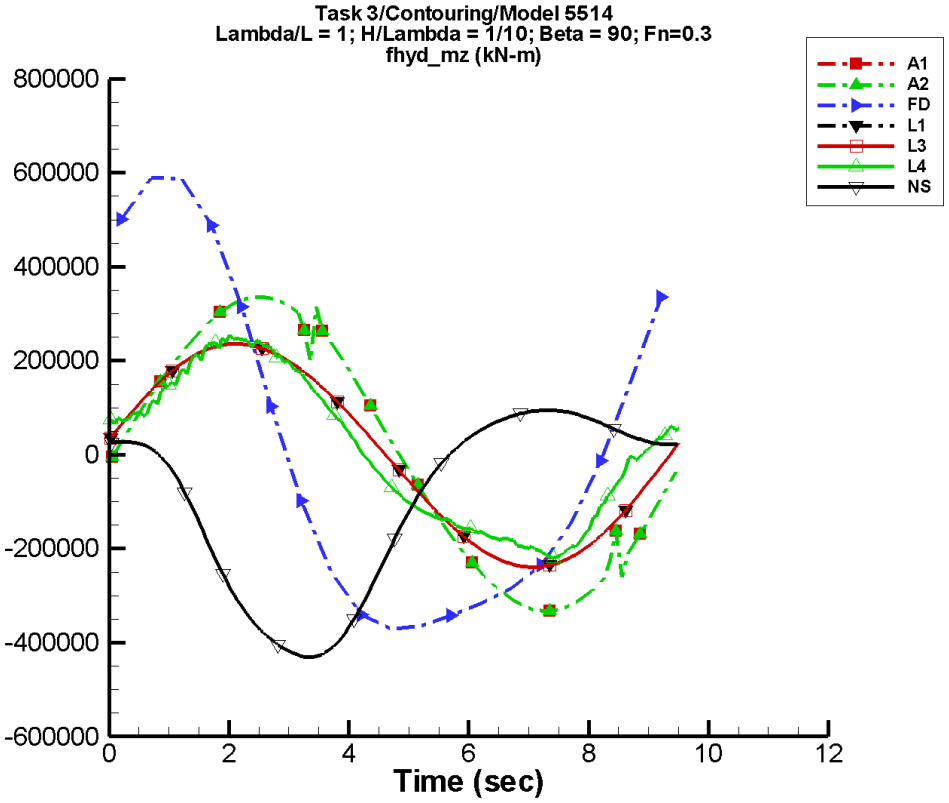
Figure J–99. Time history of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–197. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	0.403	154.	-85	0.600	100
A2	0.403	154.	-85	0.600	100
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-4.39E-03	4.73E-02	82	0.176	-140

Table J–198. Minimum and maximum of of M_z^{hyd} for wave contouring in following seas with heave and pitch at $F_n=0.3$. Waves with $\lambda/L=2$ and $H/\lambda=1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-512.	519.	-160.	164.
A2	-512.	519.	-160.	164.
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-19.1	19.6	-1.28	1.38



Data identically zero, insufficient, or not available from NFA.

Figure J–100. Time history of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–199. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

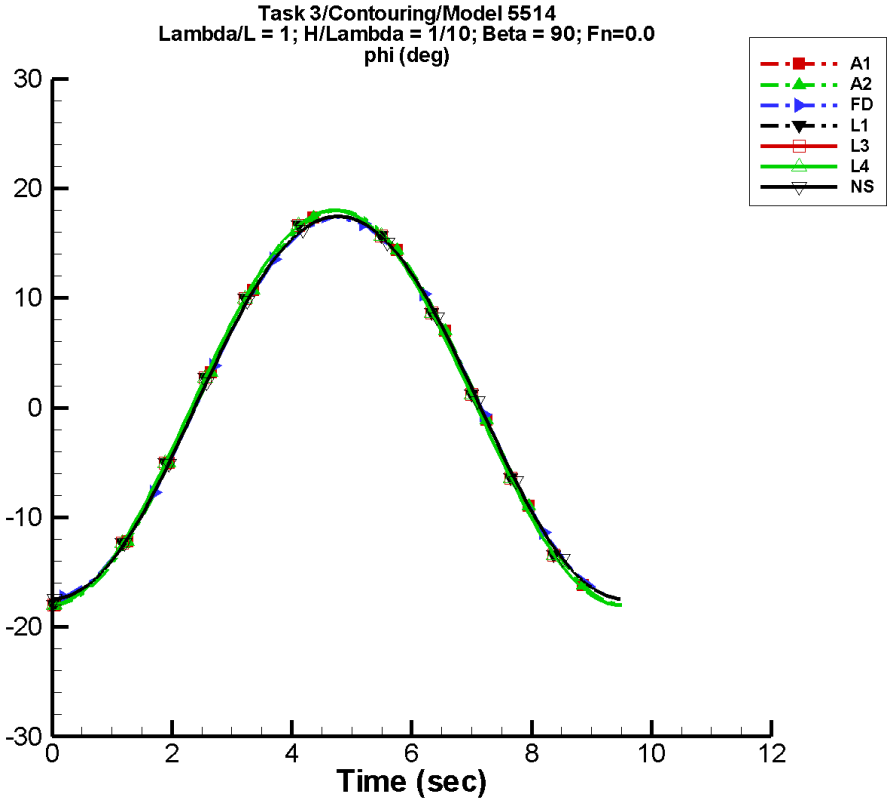
Code	a_0 (kN-m)	a_1 (kN-m)	Φ_1 (deg)	a_2 (kN-m)	Φ_2 (deg)
A1	-279.	3.30E+05	-8	295.	-90
A2	-279.	3.30E+05	-8	295.	-90
FD	1.79E+04	4.75E+05	46	1.13E+05	-19
L1	-110.	2.37E+05	-1	7.68E+03	11
L3	-112.	2.37E+05	-1	7.68E+03	11
L4	6.65E+03	2.14E+05	7	1.67E+04	-122
NF	—	—	—	—	—
NS	-1.01E+05	2.45E+05	151	8.83E+04	18

Table J–200. Minimum and maximum of of M_z^{hyd} for wave contouring in beam seas with heave and roll at $F_n=0.3$. Waves with $\lambda/L=1$ and $H/\lambda=1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (kN-m)	Maximum (kN-m)	Minimum (kN-m)	Maximum (kN-m)
A1	-3.33E+05	3.35E+05	-3.30E+05	3.32E+05
A2	-3.33E+05	3.35E+05	-3.30E+05	3.32E+05
FD	-3.71E+05	5.91E+05	-3.19E+05	5.32E+05
L1	-2.40E+05	2.36E+05	-2.39E+05	2.35E+05
L3	-2.40E+05	2.36E+05	-2.39E+05	2.35E+05
L4	-2.20E+05	2.55E+05	-2.13E+05	2.44E+05
NF	—	—	—	—
NS	-4.31E+05	9.48E+04	-4.29E+05	9.43E+04

Time history of ϕ for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Data identically zero or nonexistent for all codes.



Data identically zero, insufficient, or not available from NFA.

Figure J–101. Time history of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–201. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

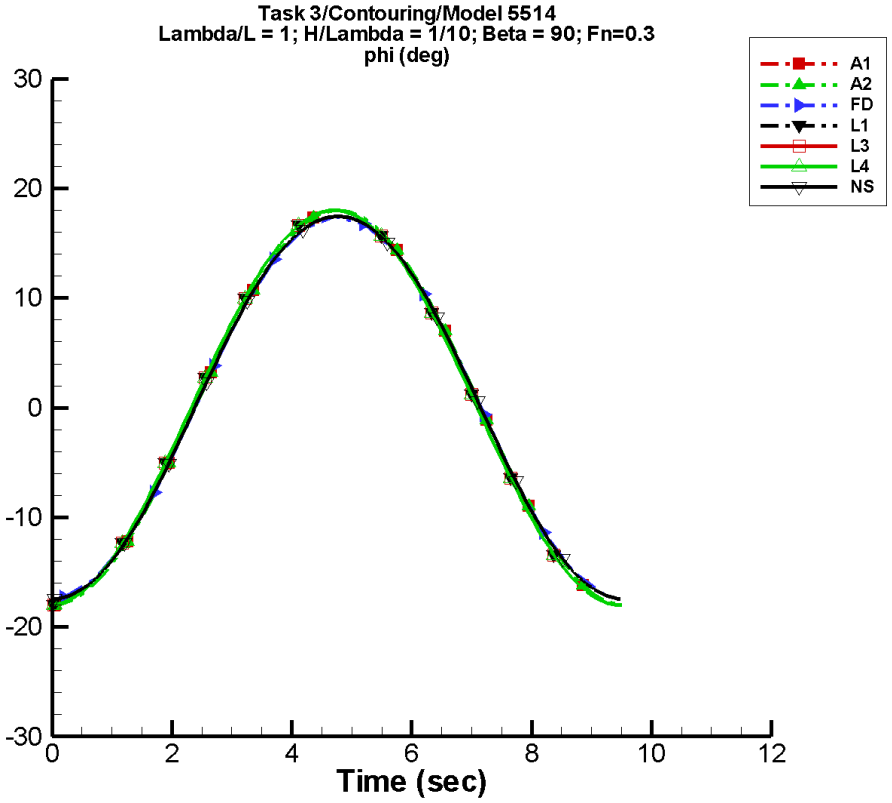
Code	a_0 (deg)	a_1 (deg)	Φ_1 (deg)	a_2 (deg)	Φ_2 (deg)
A1	1.52E-02	18.0	-94	2.07E-02	-151
A2	1.52E-02	18.0	-94	2.07E-02	-151
FD	3.91E-03	17.6	-104	2.55E-02	134
L1	6.87E-04	18.0	-95	1.65E-03	89
L3	6.87E-04	18.0	-95	1.65E-03	89
L4	6.87E-04	18.0	-95	1.65E-03	89
NF	—	—	—	—	—
NS	4.36E-04	17.6	-90	2.42E-02	132

Table J–202. Minimum and maximum of of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (deg)	Maximum (deg)	Minimum (deg)	Maximum (deg)
A1	-18.0	18.0	-18.0	17.8
A2	-18.0	18.0	-18.0	17.8
FD	-17.3	17.4	-15.5	13.2
L1	-18.0	18.0	-18.0	17.9
L3	-18.0	18.0	-18.0	17.9
L4	-18.0	18.0	-18.0	17.9
NF	—	—	—	—
NS	-17.4	17.4	-17.5	17.4

Time history of ϕ for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Data identically zero or nonexistent for all codes.



Data identically zero, insufficient, or not available from NFA.

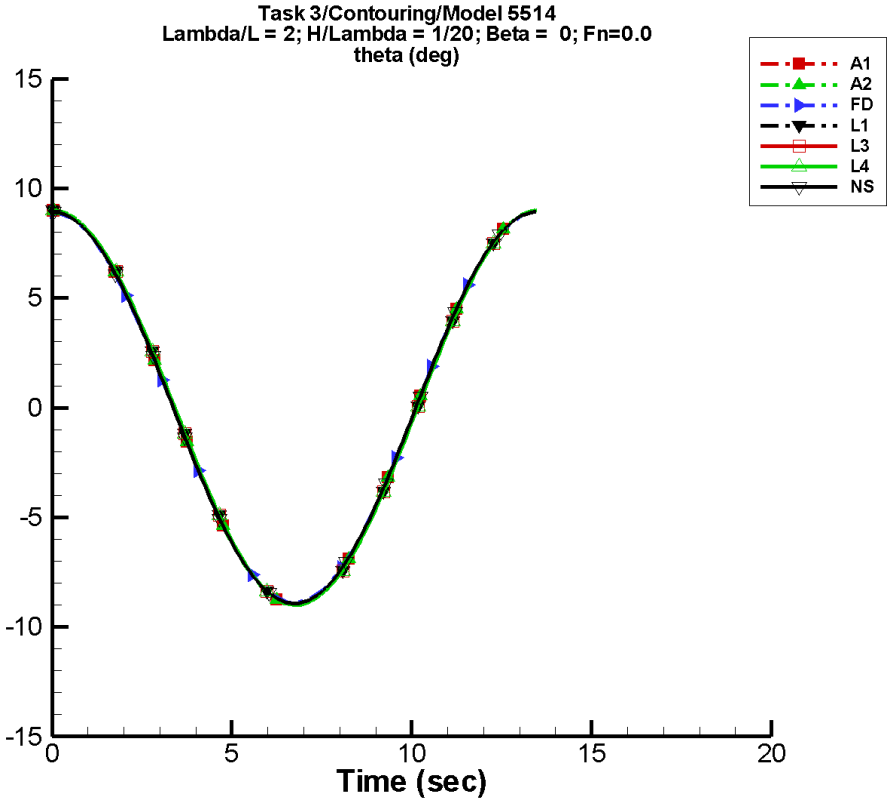
Figure J–102. Time history of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–203. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (deg)	a_1 (deg)	Φ_1 (deg)	a_2 (deg)	Φ_2 (deg)
A1	1.52E-02	18.0	-94	2.07E-02	-151
A2	1.52E-02	18.0	-94	2.07E-02	-151
FD	3.91E-03	17.6	-104	2.55E-02	134
L1	6.87E-04	18.0	-95	1.65E-03	89
L3	6.87E-04	18.0	-95	1.65E-03	89
L4	6.87E-04	18.0	-95	1.65E-03	89
NF	—	—	—	—	—
NS	4.39E-04	17.6	-90	2.42E-02	132

Table J–204. Minimum and maximum of of ϕ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (deg)	Maximum (deg)	Minimum (deg)	Maximum (deg)
A1	-18.0	18.0	-18.0	17.8
A2	-18.0	18.0	-18.0	17.8
FD	-17.3	17.4	-15.5	13.2
L1	-18.0	18.0	-18.0	17.9
L3	-18.0	18.0	-18.0	17.9
L4	-18.0	18.0	-18.0	17.9
NF	—	—	—	—
NS	-17.4	17.4	-17.5	17.4



Data identically zero, insufficient, or not available from NFA.

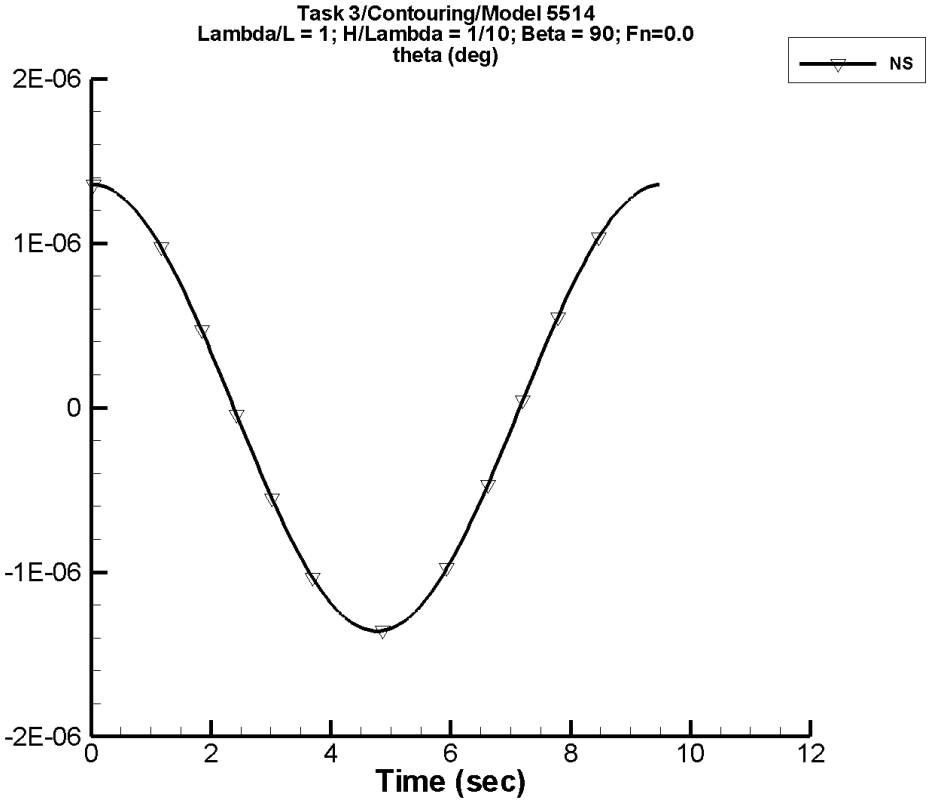
Figure J–103. Time history of θ for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Table J–205. Coefficients of the Fourier fit $a_0+a_1\sin(\omega t+\Phi_1)+a_2\sin(2\omega t+\Phi_2)+\cdots$ of θ for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (deg)	a_1 (deg)	Φ_1 (deg)	a_2 (deg)	Φ_2 (deg)
A1	-5.93E-03	9.00	86	8.79E-03	7
A2	-5.93E-03	9.00	86	8.79E-03	7
FD	-2.67E-03	8.94	85	3.31E-03	-2
L1	-2.24E-04	9.00	83	7.35E-04	-168
L3	-2.24E-04	9.00	83	7.35E-04	-168
L4	-2.24E-04	9.00	83	7.35E-04	-168
NF	—	—	—	—	—
NS	-1.36E-03	8.95	90	4.41E-03	-25

Table J–206. Minimum and maximum of of θ for wave contouring in following seas with heave and pitch at $F_n = 0.0$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 13.48 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (deg)	Maximum (deg)	Minimum (deg)	Maximum (deg)
A1	-9.00	9.00	-8.95	9.02
A2	-9.00	9.00	-8.95	9.02
FD	-8.90	8.92	-7.70	8.38
L1	-9.00	9.00	-8.98	9.04
L3	-9.00	9.00	-8.98	9.04
L4	-9.00	9.00	-8.98	9.04
NF	—	—	—	—
NS	-8.93	8.93	-8.91	8.95



Data identically zero, insufficient, or not available from AEGIR-1, AEGIR-2, FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

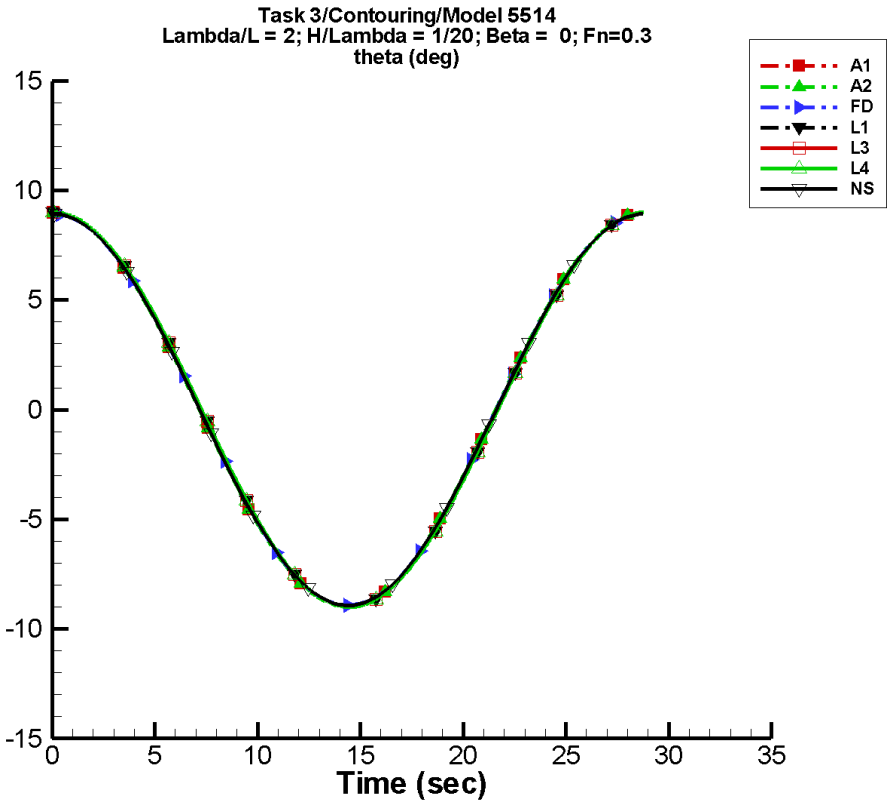
Figure J–104. Time history of θ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–207. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of θ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (deg)	a_1 (deg)	Φ_1 (deg)	a_2 (deg)	Φ_2 (deg)
A1	—	—	—	—	—
A2	—	—	—	—	—
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-2.93E-10	1.36E-06	90	4.32E-10	17

Table J–208. Minimum and maximum of of θ for wave contouring in beam seas with heave and roll at $F_n = 0.0$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (deg)	Maximum (deg)	Minimum (deg)	Maximum (deg)
A1	—	—	—	—
A2	—	—	—	—
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-1.36E-06	1.36E-06	-1.36E-06	1.36E-06



Data identically zero, insufficient, or not available from NFA.

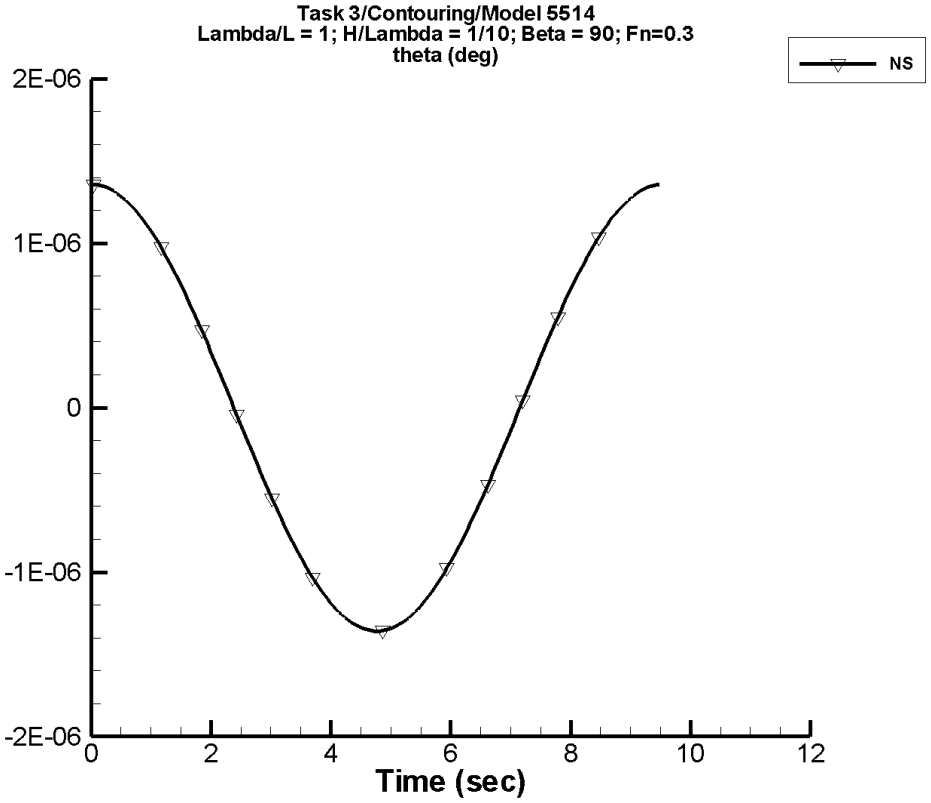
Figure J–105. Time history of θ for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Table J–209. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of θ for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (deg)	a_1 (deg)	Φ_1 (deg)	a_2 (deg)	Φ_2 (deg)
A1	-1.28E-03	9.00	89	1.87E-03	19
A2	-1.28E-03	9.00	89	1.87E-03	19
FD	-4.32E-04	8.95	93	3.52E-03	-10
L1	3.57E-04	9.00	89	3.41E-04	-100
L3	3.57E-04	9.00	89	3.41E-04	-100
L4	3.57E-04	9.00	89	3.41E-04	-100
NF	—	—	—	—	—
NS	1.88E-03	8.95	90	3.24E-03	-100

Table J–210. Minimum and maximum of of θ for wave contouring in following seas with heave and pitch at $F_n = 0.3$. Waves with $\lambda/L = 2$ and $H/\lambda = 1/20$. Encounter period = 28.82 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (deg)	Maximum (deg)	Minimum (deg)	Maximum (deg)
A1	-9.00	9.00	-8.99	9.01
A2	-9.00	9.00	-8.99	9.01
FD	-8.93	8.92	-8.66	8.87
L1	-9.00	9.00	-9.00	9.00
L3	-9.00	9.00	-9.00	9.00
L4	-9.00	9.00	-9.00	9.00
NF	—	—	—	—
NS	-8.93	8.93	-8.91	8.95



Data identically zero, insufficient, or not available from AEGIR-1, AEGIR-2, FREDYN, LAMP-1, LAMP-3, LAMP-4 and NFA.

Figure J–106. Time history of θ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Table J–211. Coefficients of the Fourier fit $a_0 + a_1 \sin(\omega t + \Phi_1) + a_2 \sin(2\omega t + \Phi_2) + \cdots$ of θ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

Code	a_0 (deg)	a_1 (deg)	Φ_1 (deg)	a_2 (deg)	Φ_2 (deg)
A1	—	—	—	—	—
A2	—	—	—	—	—
FD	—	—	—	—	—
L1	—	—	—	—	—
L3	—	—	—	—	—
L4	—	—	—	—	—
NF	—	—	—	—	—
NS	-2.93E-10	1.36E-06	90	4.32E-10	17

Table J–212. Minimum and maximum of of θ for wave contouring in beam seas with heave and roll at $F_n = 0.3$. Waves with $\lambda/L = 1$ and $H/\lambda = 1/10$. Period = 9.53 sec. Model 5514 scaled to L = 142 m.

	Unfiltered		Filtered	
Code	Minimum (deg)	Maximum (deg)	Minimum (deg)	Maximum (deg)
A1	—	—	—	—
A2	—	—	—	—
FD	—	—	—	—
L1	—	—	—	—
L3	—	—	—	—
L4	—	—	—	—
NF	—	—	—	—
NS	-1.36E-06	1.36E-06	-1.36E-06	1.36E-06