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14. ABSTRACT
This monograph will be part of a series on underwater acoustics being supported by ONR-OA. It will provide an in-depth review of the current state of data and models for acoustic interaction with the seafloor at high frequencies.

15. SUBJECT TERMS

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Monograph on High-Frequency Seafloor Acoustics

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LONG-TERM GOALS

This monograph will be part of a series on underwater acoustics being supported by ONR-OA. It will provide an in-depth review of the current state of data and models for acoustic interaction with the seafloor at high frequencies.

OBJECTIVES

The monograph will cover geoacoustics and acoustics, measurements and modeling. The acoustics chapters will treat attenuation and dispersion in sediments, reflection loss, scattering into the water column, and penetration into the sediment.

APPROACH

This work is a collaboration with Mike Richardson of NRL-SSC. Darrell Jackson is primarily responsible for the acoustic content of the monograph while Mike Richardson (under separate funding) is primarily responsible for geoacoustic content. The main text will summarize the current state of data and models, and complex derivations and tables will be placed in appendices. Extensive use will be made of illustrative figures.

WORK COMPLETED

The draft manuscript now includes an introductory chapter, a chapter outlining essential definitions, and chapters on wave theory for fluid, elastic, and poroelastic media. Chapters on scattering and reflection data, and models for scattering by rough seafloors (including comparisons with data) are nearly complete. Appendices have been written on transducers, signal processing, units, far-field issues, and ocean acoustic measurements, and an extensive bibliography has been assembled.

RESULTS

This year's work has focused on organizing recent published results from many different investigators, including the SAX99 experiment.

IMPACT/APPLICATIONS

This book should facilitate the initial efforts of new investigators, particularly students, and provide a much-needed reference for established researchers.

RELATED PROJECTS

The monograph will incorporated newly published results of investigators supported under the ONR High-Frequency Sediment Acoustics Departmental Research Initiative.