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Public reporting burden for this collection of information is estimated to average 1 hour per gathering and maintaining the data needed, and completing and reviewing the collection this collection of information, including suggestions for reducing this burden, to Washington Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management a

1. Agency Use Only (Leave blank).		2. Report Date. 1990		ADSTRACT	
4. Title and Subtitle. Northwest Atlantic EOF-Based Temperature and Salinity Climatology				5. Funding Numbers. Program Element No 63207N Project No X2008 Task No. Accession No DN259001	
6. Author(s). M. R. Carnes and W. J. Teague				8. Performing Organization Report Number. AB 90:322:125	
7. Performing Organization Name(s) and Address(es). Ocean Science Directorate Naval Oceanographic and Atmospheric Research Laboratory Stennis Space Center, MS 39529-5004				10. Sponsoring/Monitoring Agency Report Number. AB 90:322:125	
9. Sponsoring/Monitoring Agency Name(s) and Address(es). Space and Naval Warfare Systems Command PDW-141 Washington, D.C. 20363-5100				11. Supplementary Notes. EOS	
12a. Distribution/Availability Statement. Approved for public release; distribution is unlimited.				12b. Distribution Code. Dist Special A-1 21	
13. Abstract (Maximum 200 words). Climatological relationships which allow transformations among several common oceanographic variables have been developed for the Northwest Atlantic from profiles of temperature and salinity extracted from the Navy's Master Oceanographic Observation Data Set (MOODS). All pairs of temperature and salinity profiles extending from the surface to at least 100 m were edited and then extended to 2000 m by optimal interpolation. Profiles from the Generalized Digital Environmental Model (GDEM) climatology were used as the assumed mean, and the between-depth temperature and salinity covariances were derived from the data set. Empirical Orthogonal Functions (EOFs) of the temperature and salinity vertical structure were computed from the extended data set. Each profile was then compressed to the amplitudes of the first three EOFs. The error variance for profiles reconstructed from the first three EOFs is only 4% of original profile variance (computed over the entire data set). Step-wise least-squares regressions among temperature and salinity EOF amplitudes, dynamic heights, and surface temperatures were used to construct several relationships: temperature or salinity amplitudes as a function of dynamic height (or as a function of dynamic height and surface temperature), salinity amplitudes as functions of temperature amplitudes, and dynamic height as a function of temperature amplitudes. Thus for example, given a surface dynamic height (which may be derived from an altimeter measurement), temperature (salinity) EOF amplitudes are derived using the regression relationships, and the temperature (salinity) profile can then be constructed as the sum of the products of corresponding amplitudes and EOFs. Errors in derived profiles (or heights) were evaluated over all profiles in the original data set.					
14. Subject Terms. (U) Ocean Models; (U) Data Assimilation				15. Number of Pages. 1	
17. Security Classification of Report. Unclassified				18. Security Classification of This Page. Unclassified	
19. Security Classification of Abstract. Unclassified				20. Limitation of Abstract. SAR	

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