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Space/Time Structure of the Near-Surface Temperature Field During the NORPAX Pole Experiment

T.P. Barnett, R.A. Knox, and R.A. Weller

Scripps Institution of Oceanography, University of California, San Diego, La Jolla 92093

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ABSTRACT

During January and February 1974 the NORPAX POLE experiment was carried out in the central Pacific to begin collection of data needed to design a large-scale ocean/atmosphere monitoring program. This paper describe features of the ocean temperature field observed during POLE within a region of about 400 km in diameter centered near 35°N, 155°W. The temperature field, which was approximately stationary during the month-long experiment, was dominated by a strong north-south gradient as expected. The east-west gradient was negligible. Superimposed on this mean field was energetic noise with typical rms isotherm displacements of 25 m near the bottom of the mixed layer. The characteristic horizontal scale of this noise was 50 km near the surface although the field appeared to be anisotropic. The energy, scale length and degree of anisotropy all decrease with depth. The implications of these observations to a sampling strategy are discussed as are other conclusions drawn from a statistical analysis of the temperature data.

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Headquarters: 45 Beacon Street Boston, MA 02108-3693
DC Office: 1120 G Street, NW, Suite 800 Washington DC, 20005-3826
amsinfo@ametsoc.org Phone: 617-227-2425 Fax: 617-742-8718
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