Abstracts

Remote Sensing of Directional Gravity Wave Spectra and Surface Currents Using a Microwave Dual-Frequency Radar

D.L. Schuler. "Remote Sensing of Directional Gravity Wave Spectra and Surface Currents Using a Microwave Dual-Frequency Radar." 1978 MTT-S International Microwave Symposium Digest 78.1 (1978 [MWSYM]): 242-244.

The modulation of small-scale water waves induced by larger-scale 2 to 25 meter gravity waves has been studied by using a coherent, dual-frequency radar technique. The gravity wave modulation manifests itself as a narrow, Doppler-shifted, resonance peak in the product power spectrum of the backscattered returns. The dispersion relation (for both deep and shallow water) of the modulation pattern matches that of gravity waves. Modulation amplitude spectra have been experimentally obtained which, after sufficient averaging, closely resemble directional gravity wave slope spectra and reveal the presence of water surface surface currents.

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