



## Abstract View

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# The Surface Wave Environment In the GATE B/C Scale—Phase III

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### ABSTRACT

The surface wave environment in the GATE B/C scale is described from wave measurements made from buoys and aircraft during Phase III (September 1974). Particular emphasis is given to the wave measurements made from the pitch-roll buoy deployed in the B-scale array from the ship *Gilliss* and a similar buoy deployed in the C-scale array from *Quadra*. Reduction of the pitch-roll buoy measurements provided estimates of the one-dimensional wave spectrum as well as of the mean direction and spread of wave energy as a function of frequency. The data clearly revealed the importance of external forcing on the wave climate in GATE. Most of the wave energy present in the GATE areas was found to be swell imported from the trade wind circulations of both

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hemispheres and from an intense extratropical cyclone which crossed the North Atlantic at high latitudes early in Phase III. Locally generated waves were clearly evident in the wave spectra, but their energy level way have been modulated significantly by the low-frequency swell. The GATE wave data set can provide a powerful test of contemporary numerical wave-prediction models. The present study defines the, attributes which are required of such models for meaningful application to the GATE needs.

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