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*Comments on "Ocean Spectra for the
High-Frequency Waves as Determined from
Airborne Radar Measurements"*

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Valenzuela et al. (1971) have discussed some interesting results relating radar backscatter to the gravity-capillary region of the ocean-wave spectrum. While they have attempted to relate their observed backscatter power to the wind speed, they have neglected to report the height above the surface at which these winds were observed. This height would have been particularly useful, as they do report atmospheric-stability variations. Assuming that their Table I has the air and sea temperatures reversed on "II/11/69" (for consistency with their comment at the end of § 3.1, "... the air temperature was warmer than the sea temperature . . ."), the effect of atmospheric stability in this case may have been most influential. Such an effect has been observed (e.g., by Strong and Bellaire 1965, Richards et al., 1966); and Cardone (1969) has shown that the surface-friction velocity is enhanced by instability (or reduced with increasing stability). The interested reader is also directed to a report by Porter and Wentz (1971). Critical to the determination of a surface-friction velocity is not only knowledge of the air-sea temperature differential but also of the height of the wind measurements. It can therefore be expected that use of a stability parameter would make possible a more definitive description of the relationship of radar backscatter to ocean spectra. Since capillary waves represent a nearly instantaneous response to a wind stress, it is expected that a closer relationship would be most evident in the high-frequency portion of the ocean-wave spectrum.

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