## Abstract View

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# Distribution and Steepness of Ripples on Carrier Waves

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ABSTRACT

The slopes of ripples and the profiles of their carrier waves were simultaneously measured in a wind-wave tank with winds of various velocities blowing over preexisting, long, regular surface waves. The results include the apportionment and the slope distributions (and therefore the mean-square slopes) of ripples located on various portions of the carrier-wave profile. At low wind velocities, the surface-tension governing regime of wind-wave interaction, the leeward face of the carrier wave was found to contain more ripples than the windward face. The parasitic capillaries are concentrated on the upper half of the leeward face, and move along the leeward face toward the trough of carrier waves as the wind velocity increases. At high wind velocities, the gravity governing regime of wind-wave interaction, the ripples become more evenly distributed on the leeward and on the windward faces. How ever, the ripples on the windward face are concentrated near the carrier-wave crest, and the ripples on the leeward face are concentrated near the carrier-wave trough. At all wind velocities, the rms slope of ripples on the windward face of the carrier waves is greater than that on the leeward face.