Backscattering from Rectangular Plates Illuminated at Grazing Incidence

R. A. Ross
17A Phillips Drive, Westford, MA, 01886, USA

A formula is presented for predicting monostatic scattering from rectangular plates at grazing incidence with vertical polarization. The formula uses the Geometrical Theory of Diffraction to describe returns from the front and rear of the plate. The contribution from the rear edge is associated with a new form of double diffraction. Predictions are compared with numerical results from the Method of Moments for objects between 2 and 18 wavelengths in extent. When predicting the characteristic oscillation in RCS of rectangular plates as a function of width, accuracy increases with increase in the height of the plate. When plates are both short and wide, theory underestimates the RCS of peaks.