Statistical analysis of backscattered laser signals from rough targets in the laser altimeter application

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Keywords

optical field, Gaussian random process, phase modulation factor

Abstract

Statistical properties of the scattered field for a laser altimeter are considered. Analytical expressions are developed for the optical field correlation function and intensity correlation function, as well as the correlation degree of intensities of speckle patterns. The relationship between the backscattered signal intensity and the target roughness is analyzed.

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