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Scanning Ladar: Spatial Imaging Performance Through Turbulence MAZEN NAIRAT, Physics Department, New Mexico State University, DAVID VOLEZ, SRINIVASU PUDI, Elecrical and Computer Engeering Department, New Mexico State University — The performance of scanning laser radar is studied for generating two-dimension spatial images at long ranges. Performance is described in terms of the Modulus Transfer Function (MTF). A simple analytic expression for the MTF associated with wave front tilt caused by propagation through atmospheric turbulence is explicitly derived. The derivation includes consideration of the influence of the Fresnel length. A physical optics simulation is employed to demonstrate the applicability of the MTF approach. The results are compatible with theoretical expressions that describe the image.

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