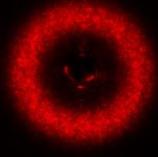


# LASERS IN MARITIME ENVIRONMENT LAB

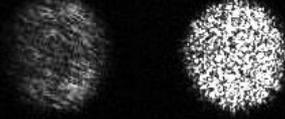
The damaging effects of atmospheric turbulence on optical beam propagation can be mitigated by shaping laser beam at the source. Pseudo partially spatially coherent laser beams have reduced scintillation as they propagate through turbulent environment. We investigate the properties of such He-Ne laser beams shaped using Liquid Crystal Spatial Light Modulators, which allow for complete specification of the source field phase correlations. The objective of the study is to improve communication systems performance.



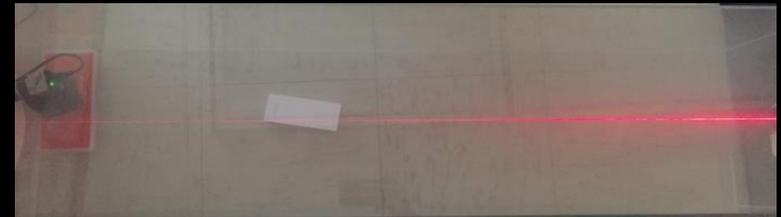
Efforts in counter directed energy weapons require detection of the propagating laser beam off axis. We study methods of detecting off axis laser beams using cameras, wave front sensors and polarimeters.



*Experimental image of a ring beam.*



*Laser light scattered from two different surfaces: paper and aluminum.*



*Off axis image of laser beam propagating in fog.*

Unique geography of USNA allows us to measure laser beam propagation over College Creek and provide distinct contributions in the lasers in maritime environment field of study.