

Abstract Submitted
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Finite-Difference Beam Propagation Modeling for Lasers in Ocular Tissues¹ THORNLEY JOBE, RAYLON YOW, DHIRAJ SARDAR, Uni. of Texas at San Antonio, San Antonio, Texas 78249-0697, ROBERT THOMAS, AFRL/HEDO, Brooks City Base, San Antonio, Texas 78235-5128 — A finite-difference solution to the non-paraxial wave equation with non-uniform arbitrary grid spacing is being constructed for the study of focused laser beam propagation in a cylindrical geometry. The model will incorporate thermal lensing as well as linear and nonlinear absorption effects to model beam propagation within the human eye. The goal of the study is to accurately predict the dynamics of retinal irradiance under conditions of non-linear propagation, with application in the establishment of infrared safe exposure limits. The poster will present a simulation of a Z-scan and comparison to experimental data.

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