

Abstract Submitted
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Phase conjugation of Laguerre-Gaussian beams by stimulated Brillouin scattering AARON SEIDEL, MATTHEW BIGELOW, St. Cloud State University — Methods of inexpensively and efficiently converting a Gaussian beam into a Laguerre-Gaussian (LG) beam are explored in an effort to observe the phase conjugation of a LG beam by stimulated Brillouin scattering. Stimulated Brillouin scattering is a non-linear process that occurs when an intense electric field, in the form of a laser, passes through a susceptible medium resulting in over 90% of the incident beam being back scattered or reflected. LG beams have a vortex or doughnut shape with the photons carrying integer values of orbital angular momentum. In this work different bleaching solutions are applied to film containing images of computer-generated holograms to optimize the transformation of a Gaussian into a LG beam. After observing stimulated Brillouin scattering with the LG beam, the backscattered beam will be analyzed to detect if orbital angular momentum of the backscattered beam is reversed.

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