

Abstract Submitted  
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**Beam shaping and production of vortex beams in coherent Raman generation** ALEXANDRA ZHDANOVA, Texas A&M University, MIAOCHAN ZHI, NIST, KAI WANG, JILA, HUA XIA, ALEXEI SOKOLOV, Texas A&M University — Broadband coherent Raman generation provides one promising pathway toward production of ultrashort pulses and time-shaped laser fields. We explore another dimension for light shaping, and add the possibility of transverse beam shaping. Experimental results from the generation of Raman sidebands using optical vortices are presented. In particular, a series of experiments on the helicity and topological charge in each sideband order will be discussed. We also propose a new, improved setup that will incorporate spatial light modulators, allowing us to change the order of each beam quickly and easily, thereby extending our study of optical vortices to higher order beams.

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