

Abstract Submitted  
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**Multiple beam interference in spiral phase plates** YISA RUMALA, AARON LEANHARDT, University of Michigan, Ann Arbor — Optical transmission through a spiral phase plate is analyzed by treating the device as a Fabry-Perot etalon with an azimuthally-varying thickness. The transmitted beam is calculated to contain a coherent superposition of optical vortices with different winding numbers. This yields an intensity profile with a periodic modulation as a function of azimuthal angle, which is verified experimentally. Applications in atom optics and matter wave interferometry will be discussed.

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