



# Robust self-trapping of vortex beams in a saturable optical medium

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We report the first observation of robust self-trapping of vortex beams propagating in a uniform condensed medium featuring local saturable self-focusing nonlinearity. Optical vortices with topological charge  $l$ , that remain self-trapped over  $\sim 5$  Rayleigh lengths, are excited in carbon disulfide using a helical light beam at 532 nm and intensities from 8 to 10 GW/cm<sup>2</sup>. At larger intensities, the vortex beams lose their stability, spontaneously breaking into two fragments. Numerical simulations based on the nonlinear Schrödinger equation including the three-photon absorption and nonpolynomial saturation of the refractive nonlinearity demonstrate close agreement with the experimental findings.

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