

## Angular self-reconstruction of petal-like beams

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### Abstract

The self-reconstruction of superpositions of Laguerre–Gaussian (LG) beams has been observed experimentally, but the results appear anomalous and without a means to predict under what conditions this take place. In this Letter, we offer a simple equation for predicting the self-reconstruction distance of superpositions of LG beams, which we confirm by numerical propagation as well as by experiment. We explain that the self-reconstruction process is not guaranteed and predict its dependence on the obstacle location and obstacle size.