

Abstract Submitted
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Characteristics of the near field diffraction of Laguerre-Gaussian modes using computer generated holograms.¹ AYMAN SWEITI, WARNER MILLER, Florida Atlantic University — There has been interest in quantum communication devices that utilize the higher dimensions afforded by the orbital angular momentum (OAM) of photons. We present experimental and computational results on the production and superposition of OAM states. In particular, we present here the near field diffraction of the orbital angular momentum states with gray scale diffraction gratings. These patterns exhibit different fork-like structures characteristic of OAM states. These are modeled using Fresnel-Kirchhoff approximation. Also the phase structure of the diffracted field has been identified.

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