

Excitation and detection of angular harmonics in an optical fiber using DOE

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Abstract

The paper considers linearly polarized modes of a weakly guiding fiber, carrying a nonzero orbital angular momentum. Experiments have been carried out on the excitation of lower-order angular harmonics and their superposition in a stepped low-mode optical fiber. It is shown that if high selectivity of excitation is achieved and when the DOE is shifted, paired harmonics with opposite signs appear.

Keywords: angular harmonic, DOE, linearly polarized mode, orbital angular momentum, optical fiber.

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