

# Regeneration of angular harmonics-containing laser beams after an obstacle

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## Abstract:

The paper considers the possibilities of regeneration of various laser beams after an obstacle, which can be a microparticle captured by this beam. A comparative analysis of the regeneration properties of modes of Bessel, Gauss-Laguerre and other laser beams containing angular harmonics is performed. Such beams are generated most effectively by using phase diffraction optical elements. The experimental results of the regeneration of Bessel beams, including nonzero order ones, are presented.

**Keywords:** harmonics-containing, laser beam, microparticle, mode Bessel, Gauss-Laguerre, diffraction optical element

**Acknowledgments:** This work was supported by the Russian-American program Basic Research and Higher Education (BRHE), grants of the President of the Russian Federation MD-209.2003.01 and NSh-1007.2003, and a grant from the Russian Foundation for Basic Research 05-01-96505.

**Citation:** Almazov AA, Khonina SN. Regeneration of angular harmonics-containing laser beams after an obstacle. *Computer Optics* 2005; 27: 72-83.

[Access full text \(in Russian\)](#)

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