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The interferometry based on regular lattice of optical vortices

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Keywords

optical vortex, vortex lattice, interferometry

Abstract

The optical vortices are point phase dislocations. The point where the phase is undetermined is called a vortex point. The lattice of optical vortices can be generated by the interference of three or more plane waves, but the optical vortex lattice generated by interference of three plane waves is regular and posses a number of special properties, which are discussed in this paper. The basic geometrical features of such a regular lattice of optical vortices are also presented. The regular lattice of optical vortices is a base for optical vortex interferometer (OVI). The OVI takes advantages of special properties of three plane wave interference field. The relations between OVI advantages and special features of the vortex lattice are discussed in brief.

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