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The behavior of the Poynting vector in the area of elementary polarization singularities

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Keywords

angular momentum, Poynting vector, polarization, vortex, polarization singularities, *s*-contour, *C*-point

Abstract

The behavior of the Poynting vector in the area of elementary polarization singularities withone or two *C*-points, which are bounded by regular shape *s*-contour is considered. It has been shown that *C*-points are associated with the "vortex" kind singularities of the averaged transversal component of the Poynting vector if the handedness factor and topological charge of *C*-point are characterized by different signs. "Passive" Poynting singularities arise in the area if the signs are the same. It has been shown that the positions of the Poynting singularities shift relatively to the *C*-points under the phase and amplitude asymmetry of orthogonal components of the resulting field. The results of the computer simulation are presented.