

Vector singularities are predicted and discovered experimentally in partially polarized combined fields formed by incoherent superposition of orthogonally polarized beams. Such singularities are U contours with zero degree of polarization and isolated P points with unit degree of polarization centered at vortices of the orthogonally polarized component of the combined beam. Crossing a U contour switches the polarization state to the orthogonal one. The above-mentioned singularities are adequately described in terms of the complex degree of polarization in the Stokes-space representation. It is shown that the field elements corresponding to the extrema of the complex degree of polarization form the vector skeleton of a partially coherent nonuniformly polarized field.

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