Title:	Quantum diffraction of position-momentum entangled photons from a sharp edge
Authors:	Gambhir, Samridhi (/jspui/browse?type=author&value=Gambhir%2C+Samridhi) Singh, Mandip (/jspui/browse?type=author&value=Singh%2C+Mandip)
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Abstract:	In this paper, an experiment of quantum diffraction of position-momentum entangled photons from a straight sharp edge is presented. Path of a single photon of an entangled pair is partially blocked by a sharp edge whereas the other photon is detected at a stationary location without revealing the which-path information of the other photon. Quantum diffraction pattern of the sharp edge is revealed only in the correlated conditional detection of spatially separated photons and no diffraction pattern is formed in local detections of individual photons. Theoretical analysis of the quantum diffraction of position-momentum entangled photons from a sharp edge is also presented in this paper. Experimental measurements of the quantum diffraction pattern are compared with theoretically calculated quantum diffraction pattern of position-momentum entangled photons.
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