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Quantum Ghost Imaging of Intensity and Phase Objects¹ TIKARAM NEUPANE, WILLIAM MOORE, BAGHER TABIBI, FELIX SEO, Hampton University, HAMPTON UNIVERSITY TEAM — The quantum ghost imaging of intensity and phase objects were studied with two spatially entangled photon pairs by two spontaneous down conversions in the double Mach-Zehnder interferometers. The spatially entangled photon pair of signal and idler was produced by a pump beam with both momentum and energy conservations. The visible down conversion is called as signal and infrared down conversion is named as idler conventionally. The first infrared is interact with the intensity and phase object and induces the coherency with the second idler without amplification that holds the indistinguishability between idlers. The indistinguishability of idlers in the infrared spectrum provides the interference of signals in the visible spectrum. Then, the interaction of infrared with intensity and phase objects provides the measurement of visible with the nonlocal correlation.

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