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Title:	Quantum double-double-slit experiment with momentum entangled photons
Authors:	Kaur, M. (/jspui/browse?type=author&value=Kaur%2C+M.) Singh, Mandip (/jspui/browse?type=author&value=Singh%2C++Mandip)
Keywords:	Quantum photons double-double-slit
Issue Date:	2020
Publisher:	Nature Research
Citation:	Scientific Reports, 10(1)
Abstract:	Double-double-slit thought experiment provides profound insight on interference of quantum entangled particles. This paper presents a detailed experimental realisation of quantum double-double-slit thought experiment with momentum entangled photons and theoretical analysis of the experiment. Experiment is configured in such a way that photons are path entangled and each photon can reveal the which-slit path information of the other photon. As a consequence, single photon interference is suppressed. However, two-photon interference pattern appears if locations of detection of photons are correlated without revealing the which-slit path information. It is also shown experimentally and theoretically that two-photon quantum interference disappears when the which-slit path of a photon in the double-double-slit is detected.
URI:	https://pubmed.ncbi.nlm.nih.gov/32651408/ (https://pubmed.ncbi.nlm.nih.gov/32651408/) http://hdl.handle.net/123456789/3166 (http://hdl.handle.net/123456789/3166)
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