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Title:	Path integral for non-paraxial optics
Authors:	Dey, Sanjib (/jspui/browse?type=author&value=Dey%2C+Sanjib)
Keywords:	Non-paraxial optics Path integral Mathematical analogy Quantum gravity
Issue Date:	2018
Publisher:	Institute of Physics Publishing
Citation:	EPL, 124,(4)
Abstract:	In this paper, we have constructed the Feynman path integral method for non-paraxial optics. This is done by using the mathematical analogy between a non-paraxial optical system and the generalized Schrödinger equation deformed by the existence a minimal measurable length. Using this analogy, we investigated the consequences of a minimal length in this optical system. This path integral has been used to obtain instanton solution for such an optical system. Moreover, the Berry phase of this optical system has been investigated. These results may disclose a new way to use the path integral approach in optics. Furthermore, as such systems with an intrinsic minimal length have been studied in quantum gravity, the ultra-focused optical pulses can be used as an optical analog of quantum gravity.
Description:	Only IISERM authors are available in the record.
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