Title:	Coherence-assisted non-Gaussian measurement-device-independent quantum key distribution
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Abstract:	Non-Gaussian operations on two-mode squeezed vacuum states in continuous-variable (CV) measurement-device-independent (MDI) quantum key distribution (QKD) protocols have been shown to effectively increase the total transmission distances drastically. In this paper we show that photon subtraction on a two-mode squeezed coherent (PSTMSC) state can further improve the transmission distances remarkably. To that end we also provide a generalized covariance matrix corresponding to the PSTMSC state. We show that coherence, defined as the amount of displacement of the vacuum state, along with non-Gaussianity can help improve the performance of prevalent CV MDI QKD protocols. Furthermore, since we use realistic parameters, our technique is experimentally feasible and can be readily implemented.
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