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Measurement-device-independent quantum key distribution with uncharacterized qubit sources ZHEN-QIANG YIN, Key lab of quantum information, University of Science and Technology of China — Measurement-device-independent quantum key distribution (MDIQKD) is proposed to be secure against any possible detection attacks. The security of the original proposal relies on the assumption that the legitimate users can fully characterize the encoding systems including sources. Here, we propose a new MDIQKD protocol where we allow uncharacterized encoding systems as long as qubit sources are used. A security proof of the new MDIQKD protocol is presented that does not need the knowledge of the encoding states. Simulation results show that the new scheme is practical.

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