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Preserving flying qubit in single-mode fiber with Knill Dynamical Decoupling (KDD) MANISH GUPTA, Louisiana State Univ - Baton Rouge, ERIK NAVARRO, California State University, TODD MOULDER, JASON MUELLER, ASHKAN BALOUCHI, KATHERINE BROWN, HWANG LEE, JONATHAN DOWLING, Louisiana State Univ - Baton Rouge — The implementation of information-theoretic-crypto protocol is limited by decoherence caused by the birefringence of a single-mode fiber. We propose the Knill dynamical decoupling scheme, implemented using half-wave plates, to minimize decoherence and show that a fidelity greater than 96% can be achieved even in presence of rotation error.

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