Interdimensional Quantum Cloning CHAN HYUN PAK, JEAN-FRANCOIS VAN HUELE, Brigham Young University — We introduce the concept of Interdimensional Quantum Cloning (IDC). The aim of IDC is to maximize fidelity by manipulating information of input state in different dimensions. We briefly present different approaches to IDC. In particular, we investigate how to perform IDC by representing a qutrit as three qubits as proposed by Lopez-Saldivar et. al. [Quantum Information Processing 18.7 (2019): 210.] and applying universal quantum cloning on the qubits. We calculate the fidelity of this IDC procedure numerically and discuss its dependence on the mixedness of the input state.

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