Two-Qubit Disentanglement and Decoherence from Classical Random Telegraph Noise\textsuperscript{1} DONG ZHOU, ALEX LANG, ROBERT JOYNT, University of Wisconsin-Madison — We consider the two-qubit disentanglement due to classical random telegraph noise where the qubits do not interact and have tunable working points. Using a new mathematical method that is suited to treat all working points, we show that entanglement sudden death and revival are dependent on several factors, such as qubit working point, noise coupling strength and initial state entanglement. For extended Werner states, the concurrence is related to the difference of two functions: one is related to dephasing and the other longitudinal relaxation. A physical interpretation based on a generalized Bloch sphere representation is given.

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Dong Zhou
University of Wisconsin-Madison

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