

Abstract Submitted
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Two-detector two-qubit correlated continuous measurements and their implications for quantum computing RUSKO RUSKOV, Laboratory for Physical Sciences, College Park, MD 20740, CHARLES TAHAN, Laboratory for Physical Sciences, College Park, MD 20740 — We calculate the full counting statistics for a system of two interacting qubits which are simultaneously measured by weakly coupled linear detectors. Two approaches are considered based on rate equations for the full system-detectors density matrix and on quantum filtering equations. Implications for the assessment of quantumness in physical devices based on charge qubits are considered. In addition we consider applications of such systems to practical quantum computing in silicon and/or GaAs quantum dots.

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