

Abstract Submitted  
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**Qubit decoherence due to detector switching**<sup>1</sup> FRANK WILHELM,  
University of Waterloo, IOANA SERBAN, Leiden University — We provide insight  
into the qubit measurement process involving a switching type of detector. We  
study the switching-induced decoherence during escape events. We present a sim-  
ple method to obtain analytical results for the qubit dephasing and bit-flip errors,  
which can be easily adapted to various systems. Within this frame we investigate  
potential of switching detectors for a fast but only weakly invasive type of detec-  
tion. We show that the mechanism that leads to strong dephasing, and thus fast  
measurement, inverts potential bit flip errors due to an intrinsic approximate time  
reversal symmetry. Based on arXiv:0905.3045

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