

Abstract Submitted
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Crosstalk characterization by eigenvalue estimation: Theory¹

MARCUS DA SILVA, Raytheon BBN Technologies — As qubit systems continue to grow and long coherence times become routine, the dominating sources of error shift away from decoherence and towards control errors. One pervasive source of control errors is crosstalk – where control fields intended for one qubit leak onto other qubits. In this talk we describe a method to quantify crosstalk by estimating the eigenvalues of the system’s evolution using a technique known as “spectrum estimation”. We discuss the wide applicability of the method, and demonstrate similar accuracy scaling to the robust phase estimation algorithm of Kimmel, Low, and Yoder.

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