

Abstract Submitted
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Correcting detection error in quantum computation and state engineering through data processing¹ CHAO SHEN, LUMING DUAN, University of Michigan-Ann Arbor — Quantum error correction in general is experimentally challenging as it requires significant expansion of the size of quantum circuits and accurate performance of quantum gates to fulfill the error threshold requirement. Here we propose a method much simpler for experimental implementation to correct arbitrary detection errors. The method is based on processing of data from repetitive experiments and can correct detection error of any magnitude, as long as the error magnitude is calibrated. The method is illustrated with its application to detection of multi-partite entanglement from quantum state engineering.

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