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Abstract for an Invited Paper for the MAR16 Meeting of the American Physical Society

Fault Tolerance in Small Experiments DANIEL GOTTESMAN, Perimeter Inst for Theo Phys

Experiments are finally reaching the size and level of precise control where we can hope to see a truly fault-tolerant experiment within the next few years. I will give a proposal for a 5-qubit fault-tolerant experiment and discuss how to evaluate if an experiment has successfully demonstrated fault tolerance. I will also consider the possibility of using future fault-tolerant experiments to answer important questions about the interaction of fault-tolerant protocols with real experimental errors.