Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

High-threshold surface code quantum computing: threshold calculation[1] PETER GROSZKOWSKI, AUSTIN FOWLER, Institute for Quantum Computing, University of Waterloo, ASHLEY M. STEPHENS, University of Melbourne — Surface codes are topological quantum error correcting codes. In such codes, information is encoded in a collection of physical qubits arranged on a lattice, with only nearest-neighbor interaction required for processing and readout. In this talk we present a detailed account of a numerical threshold calculation for a planar surface code with boundaries (arXiv:0803.0272). In the end we find a threshold value that's approaching 1%.

[1]NSERC

Peter Groszkowski
Institute for Quantum Computing, University of Waterloo

Date submitted: 21 Nov 2008 Electronic form version 1.4