High-threshold surface code quantum computing: threshold calculation\textsuperscript{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%.

\textsuperscript{1}NSERC