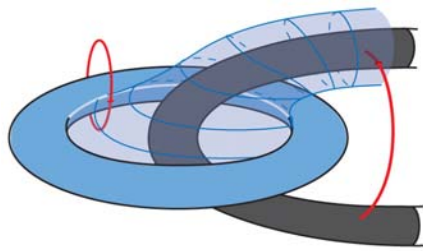


**SEMINAR  
OF  
THE INSTITUTE FOR QUANTUM INFORMATION SCIENCE**

**3:00 pm Friday 28 July 2006 in SB 148**

Robert Raussendorf  
Perimeter Institute for Theoretical Physics  
<http://perimeterinstitute.ca>



Title: A fault-tolerant one-way quantum computer

Abstract: Describe a fault-tolerant one-way quantum computer on cluster states in three dimensions. The presented scheme uses methods of topological error correction resulting from a link between cluster states and Kitaev's surface codes. A quantum circuit is realized by choosing appropriate boundary conditions for the 3D cluster. The error threshold is 0.11 percent for each source in an error model with preparation-, gate-, storage- and measurement errors.

Joint work with Jim Harrington and Kovid Goyal.

Reference: quant-ph/0510135.



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