



PHYSICS AND ASTRONOMY COLLOQUIUM

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“The International Race For A Quantum Computer”

Abstract

It can be difficult to discern true breakthroughs in modern quantum computing research. Given the tremendous potential of these future technologies, it is perhaps not surprising that small steps are sometimes heralded as momentous game-changers. Some of this enthusiasm is misplaced - as far as we know so far, quantum computers could only outperform today's "classical" computers at specific tasks. Nevertheless, the tasks they would excel at are of incredible value, and quantum engineering R&D is starting to move beyond academic labs and into industry. In this talk I will outline the quantum-mechanical underpinnings of such impressive computational power, and give an overview and status update of this very rapidly moving field. Within this overview I will describe some of the small but important steps our lab has recently taken using silicon-based CMOS-compatible quantum systems.

Wednesday, March 2, 2016

3:00 p.m.

Bob Wright Centre

Room A104