



Pacific Institute for the  
Mathematical Sciences

# PIMS Distinguished Speakers Series

***CHRIS GODSIL***

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University of Waterloo*

Title: Continuous Quantum Walks on Graphs

Abstract: If  $A$  is the adjacency matrix of a graph  $X$ , then the matrix exponential  $U(t) = \exp(itA)$  determines what physicists term a continuous quantum walk. They ask questions such as: for which graphs are the vertices  $a$  and  $b$  and a  $t$  such that  $|U(t)_{a,b}| = 1$ ? The basic problem is to relate the physical properties of the system with properties of the underlying graphs, and to study this we make use of results from the theory of graph spectra, number theory, ergodic theory. . . . My talk will present some of the progress on this topic.

SOME REFRESHMENTS! EVERYONE WELCOME!

Friday—Nov. 23, 2012

12:00 to 12:50 p.m.

UHall B650