



**The Hong Kong Polytechnic University
Department of Applied Mathematics**

Seminar

On

**When Bernoulli met Gauss –
How to make differential geometry useful to
implement fast quantum gate**

by

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Abstract

Quantum information processing(QIP) has been identified as one of the key future technologies that are crucial for communication, cryptography, high-performance computing, complex-system simulation, and national security. Quantum control, on the other hand, provides a powerful mathematical tool to study and analyze the QIP devices. In this talk, I will give a brief introduction to quantum control, and in particular, I will focus on our recent work that applies differential geometry to studying the quantum gate generation problems. This new framework will benefit in providing a more efficient numerical method than the traditional ones in calculating the time-optimal solution to generate the target quantum gate.

Date : 5 June, 2014 (Thursday)

Time : 3:00-4:00 p.m.

Venue : HJ610, The Hong Kong Polytechnic University

*** * * ALL ARE WELCOME * * ***