



DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE  
THE UNIVERSITY OF HONG KONG

40<sup>th</sup> Anniversary Seminar Series

**Professor Peter G. HALL**

*Department of Mathematics and Statistics  
The University of Melbourne  
Australia*

will give a talk

entitled

**ON DECONVOLUTION WITH REPEATED MEASUREMENTS**

Abstract

In many statistical inverse problems it is necessary to suppose that the transformation that is inverted is known. Although this assumption might seem unrealistic, the problem is often insoluble without it. However, if additional data are available then it is possible to estimate consistently the unknown error density. Data are seldom available directly on the transformation, but repeated, or replicated, measurements increasingly are becoming available. Such data consist of "intrinsic" values that are measured several times, with errors that are generally independent. Working in this setting we treat the nonparametric deconvolution problems of density estimation with observation errors, and regression with errors in variables. We show that, even if the number of repeated measurements is quite small, it is possible for modified kernel estimators to achieve the same, optimal level of performance they would if the error distribution were known.

on

**Wednesday, December 19, 2007**

**11:00 a.m. – 12:00 noon**

at

**Room 524, Meng Wah Complex  
(behind the Chong Yuet Ming Amenities Centre)**

**Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 2859 2466 for parking arrangement.**