Speaker: **Professor Guy Latouche**

Title: **Fluid queues à la Matrix-analytic**

Abstract:

I have long found Matrix-analytic methods to be fun: they are based on a combination of probabilistic reasoning, and numerical analysis thinking, with a dash of algorithmic constructing. People have found it useful for modeling purposes, in part because of the focus on the applicability of the theoretical results.

Fluid queues are used to represent systems where some quantity accumulates or is depleted, gradually over time, subject to some random environment. The first example which comes to mind probably is that of a dam or reservoir, but they have recently been analysed mostly as models of telecommunication systems as well as in risk theory. It is from the telecommunication applications that they derive their name of fluid "queues".

In this presentation, I shall focus on the type of arguments that have been used to determine the structure of the stationary distribution of fluid queues and I will comment on the procedures whereby one can actually compute it.

Biosketch:

Université Libre de Bruxelles (Belgium) in 1968, the M. Sc. Degree in Mathematical Statistics from Purdue University in 1971, and the Ph. D. degree in Mathematics from the Université Libre de Bruxelles in 1976.

He has held various positions at the Université Libre de Bruxelles where he is professeur ordinaire in the Department of Informatics. At the present time he teaches classes on stochastic processes and their applications; in an earlier life he has taught classes on management information systems as well as a course on formal methods for proving the correctness of programs. He is recovering from a stint as Dean of the Faculty of Sciences.

Guy Latouche has been a visiting professor at the University of Delaware and at the Tokyo Institute of Technology, a consultant with Bellcore, and his latest sabbatical saw him paying visits to the University of Melbourne and to the University of Adelaide.

His research interests include various aspects of computational probability: matrix methods in Markov models, traffic models for telecommunication systems, and nearly completely decomposable systems.