



Collaborative Graduate Specialization in Computational Science and Engineering

WEEKLY COLLOQUIUM

Tuesday, 20 November 2007

2:30-3:30 in RM101, Jeffery Hall

Speaker: KEN JACKSON
Department of Computer Science
University of Toronto

Title: Numerical Methods for the Valuation of Synthetic Collateralized Debt Obligations (CDOs)

Abstract: Our numerical computation group has studied several problems in computational finance over the past decade. One that we've looked at recently is the pricing of "collateralized debt obligations" (CDOs). The market for CDOs has grown rapidly to over US\$1 trillion annually in 2006, since the appearance of JP Mrogan's Bistro deal, the first synthetic CDO, in December 1997. Much of the turmoil in the financial markets recently has been due to such credit derivatives. As this suggests, there are still many open problems associated with the pricing and hedging of these complex financial instruments. I will talk briefly about some work that we have done recently in this area.

About the speaker:

Ken Jackson was born in Montreal, but grew-up in Toronto. He received all his degrees from the University of Toronto. He then spent three years in the Computer Science Department at Yale University, first as a Gibbs Instructor and then as a visiting Assistant Professor, before returning to the Computer Science Department at the University of Toronto in 1981, where he is currently a Full Professor. He was Associate Chair for Graduate Studies from 1 July 2002 to 30 June 2005. He was president of the Canadian Applied and Industrial Mathematics Society from June 2001 to June 2003.

His primary research interest is numerical computation, with particular emphasis on the numerical solution of ordinary differential equations (ODEs) and the associated problems in linear and nonlinear algebra. One focus of his work has been parallel methods for both initial-value problems (IVPs) and boundary-value problems for ODEs. Another focus has been validated (i.e., interval) methods for IVPs for ODEs. Recently, he has become interested in applying numerical methods to practical problems, computational finance and medical imaging, in particular. Past projects include numerical methods for weather forecasting, climate modeling and air quality modeling.