Joint IMS-RMI Public Lecture

Mathematical Aspects of Financial Risk

Speaker: **Professor Hans Föllmer**
Humboldt University, Berlin

Date: **Thursday, 15 February 2007**
Time: **6:30 p.m. – 7:30 p.m.**
***Venue*:** **LT25**
Blk MD 7, Faculty of Science
3 Science Drive 2
National University of Singapore

FREE ADMISSION

Abstract

Concepts and methods, which have been developed within mathematics for purely theoretical reasons, often turn out to be highly relevant in other areas. Stochastic calculus is a striking example for this "unreasonable effectiveness of mathematics": Invented by Kiyosi Itô as a means of understanding the microstructure of Markov processes, it has become a key technology in the world of finance. The speaker will first sketch the amazing story which led from Bachelier's use of Brownian motion as a model for the fluctuation of stock prices to the formula of Black and Scholes for option pricing and to the emergence of a new scientific field at the interface of mathematics, economics, and finance. He will then describe some recent developments beyond the Black-Scholes paradigm of a perfect hedge, and in particular new approaches to the quantification of financial risk.

About the Speaker

Hans Föllmer is world renowned for fundamental multi-disciplinary contributions to statistical mechanics, stochastic analysis and mathematical finance.

With a broad education in philosophy, languages, physics and mathematics in four European universities, he obtained his doctorate (Dr. rer. nat.) from the University of Erlangen. He has taught at MIT, ETH Zurich and the University of Bonn, and is professor of mathematics at Humboldt University, Berlin since 1994.

He received the following prestigious awards: Emmy Noether award (University of Erlangen), Science Prize of the GMÖOR (Gesellschaft für Mathematik, Ökonomie und Operations Research), Prix Gay-Lussac/Humboldt and the Georg Cantor Medal of the German Mathematical Society. He is a member of Academia Europaea, Deutsche Akademie der Naturforscher Leopoldina, and Berlin-Brandenburgische Akademie der Wissenschaften.

He is actively engaged in the training of scientists and mathematicians both inside and outside of Europe. He is involved in the International Research Training Group (IRTG) Berlin-Zurich and the DFG Research Center "Mathematics for key technologies". He is also a member of the IMS Scientific Advisory Board and is advisor to the NUS Department of Mathematics financial mathematics program.

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