THE UNIVERSITY OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

Computational Science Seminar

Complete Solution to the Most General Nonlinear Filtering Problems and Its Implementation

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Abstract

The famous filtering problem of estimating the state of a stochastic dynamical system from noisy observations is of central importance in engineering. The problem is reduced to solve the Duncan-Mortensen-Zakai (DMZ) equation in real time. The difficulty is that DMZ equation is a parabolic equation with coefficients in observations. This means that the DMZ equation is not available until in the application. In this lecture we shall show that this problem can be solved in real time theoretically. We present numerical algorithms for low dimensional problems implementation. Numerical simulations show the efficiency of our solutions.

Date:	April 4, 2018 (Wednesday)
Time:	4:00 – 5:00pm
Venue:	Room 210, Run Run Shaw Bldg., HKU

All are welcome