

Seminar jointly organized by ICEE & HKU-EEE Dept

Title: Optimum Stochastic Dispatch

Speaker:

Professor Pravin Varaiya
Institute of Advanced Study, HKUST
University of California, Berkeley

Date: Thursday, 16 December 2010

Time: 10:30 am

Venue: Room 603, Chow Yei Ching Building

Abstract:

Integrating wind power into the grid requires compensating its random fluctuations by back-up generation (Ancillary Services). Minimization of the cost of Ancillary Services is formulated as a multi-stage stochastic optimization problem. The problem is approached via dynamic programming. The value iteration equation has a surprising 'closed form' solution with a structure that relates it to approaches in risk management developed in finance.

Biography of the speaker:

Pravin Varaiya is Nortel Networks Distinguished Professor in the Department of Electrical Engineering and Computer Sciences at the University of California, Berkeley. From 1975 to 1992 he was also Professor of Economics at Berkeley. His research is concerned with communication networks, transportation, and hybrid systems.

Varaiya has held a Guggenheim Fellowship and a Miller Research Professorship. He has received two Honorary Doctorates, the Field Medal and Bode Prize of the IEEE Control Systems Society, and the Richard E. Bellman Control Heritage Award. He is a Fellow of IEEE, a member of the National Academy of Engineering, and a Fellow of the American Academy of Arts and Science. He is on the editorial board of Transportation Research--C. He has co-authored three books. The second edition of

High-Performance Communication Networks (with Jean Walrand) was published by Morgan-Kaufmann in 2000. "Structure and Interpretation of Signals and Systems" (with Edward Lee) was published in 2003 by Addison-Wesley.

Organizer: Prof. F.F. Wu