

Warren Lecture Series (Spring 08)

Friday, April 4th, 2008, 3:30 ~ 4:30p.m.

Civil Engineering Building 210

TOPL: Tools for Operations Planning

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Abstract

TOPL is a suite of software tools for specifying freeway operational improvement strategies such as ramp metering, demand and incident management; and for quickly estimating the benefits of such improvements. TOPL is based on the macroscopic cell transmission model. The talk begins with applications to 40-mile long California freeways: I-880N/S, I-210W/E, and a small arterial. This is followed by a description of the TOPL infrastructure: network extraction from GIS maps, model calibration, and imputation of missing ramp data.

Biography

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. From 1994 to 1997 he was Director of the California PATH program. His research concerns communication networks, transportation, and hybrid systems.

Varaiya has held a Guggenheim Fellowship and a Miller Research Professorship. He has received two Honorary Doctorates, and the Field Medal and Bode Prize of the IEEE Control Systems Society. 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 an editor of *Transportation Research--C*. He has co-authored three books and 300 technical papers. 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.