



**The Center for Control, Dynamical Systems, and Computation
University of California at Santa Barbara
Winter 2007 Seminar Series
Presents**

Stochastic Receding Horizon Control of Constrained Linear Systems with State and Control Multiplicative Noise

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Abstract:

We develop a receding horizon control approach to stochastic linear systems with control and state multiplicative noise that also contain linear and quadratic expectation constraints. Our receding horizon formulation is based upon an on-line optimization that utilizes open-loop plus linear feedback and is solved as a semi-definite programming problem. We also provide stability, performance, and constraint satisfaction results for the receding horizon controlled system under a specific choice of terminal weight and terminal constraint. This problem has direct applications to problems of portfolio optimization in financial engineering.

About the Speaker:

Jim Primbs received his PhD in Control and Dynamical Systems from Caltech in 1999 for work in the area of receding horizon control. Following that, he was a post-doc for 2 years at Caltech where his research focused on Financial Engineering. In 2001 he joined the Management Science and Engineering Department at Stanford where he teaches courses in Investment Science and Financial Engineering. His research involves developing control theory, especially in the area of receding horizon control, mainly oriented toward applications in Financial Engineering.
