



Arthur Imperatore School of Sciences and Arts

Department of Mathematical Sciences

Seminar in Stochastic Systems

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*Inverse modeling of coastal ocean processes
and sensor allocation*

Tuesday, February 22, 2005
4:00 pm
Morton 205

Abstract: We will consider a three dimensional ocean model, originally developed by Blumberg and Mellor for a prediction of coastal processes. The model is modified for various areas and further improved by the Department of Civil, Environmental, and Ocean Engineering at Stevens Institute of Technology. The model uses meteorological conditions from observation network. The data are used for a model calibration. The output is a 48h forecasts of certain ocean characteristics. The predictions are used also to create a skill score or performance measure for the model.

This talk will address three aspects of the work with the ocean model. We will describe two calibration algorithms based on inverse modeling techniques. Secondly, an approach to optimization of the observation network via two-stage stochastic optimization will be discussed. Finally, a new method for comparing the prediction performance of ocean models will be proposed.

Professor Darinka Dentcheva's research interests are in the area of optimization of stochastic systems.

Refreshments will be served at 3:45 pm.

For more information contact Barbara Moh at bmoh@stevens.edu or call 201-216-5449.