

Multidisciplinary Simulation, Estimation, and Assimilation Systems

Seminar Series

Juan M. Restrepo

Professor, Mathematics

Adjunct Professor, Statistics

Adjunct Professor, Physics of Oceans and Atmospheres

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Tales of Dynamic Uncertainty and Data-Driven Dynamics

Abstract: The data assimilation community has developed a variety of strategies for the blending of observations and models, taking into account their inherent uncertainties. It has offered persuasive arguments for its utility in some applications. For example, in weather forecasting and subsurface hydrology. I will focus on Bayesian methodologies, and describe a few new data assimilation strategies that take advantage of computational and physical conditions inherent in the intended application in order to provide useful alternative forecasts (estimates).

Biography: Juan M. Restrepo is a professor of mathematics at Oregon State University. He holds courtesy appointments in the College of Engineering as well as the College of Earth, Oceans and Atmospheric Sciences. His research interests straddle computational data-driven and probabilistic methods and multi-scale dynamics. The applications emphasize ocean dynamics and transport. He is the recipient of a DOE Young Investigator award, the SIAM Geoscience Career Award. He is a fellow of SIAM.

Friday, May 4, 2018

2:00PM; Rm. 5-314

Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 02139

Host:

Pierre Lermusiaux
<http://mseas.mit.edu>

Temp.
Fcst.

0.62
0.41
0.21
min 2

$\frac{\partial \phi_i}{\partial t} + \mathbf{u} \cdot \nabla$

Chl.
Fcst.

(dB)

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A)

loss)

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Meas
Model

Errors

Stoch. Coe

Assimilation

Adap
Mode

Estimates

MIT