HARVARD UNIVERSITY
DEPARTMENT OF STATISTICS

Tel. 617-495-5496
Fax. 617-496-8057
statdept@stat.harvard.edu
http://www.stat.harvard.edu/

Science Center 7th Fl.
One Oxford Street
Cambridge, MA 02138

STATISTICS COLLOQUIUM

MONDAY, FEBRUARY 1, 2016
TALK: 4:15 PM — SCIENCE CENTER 300H
RECEPTION: 3:50 PM

"Inference for Dynamic and Latent Variable Models via Iterated, Perturbed Bayes Maps"

Edward Ionides
Department of Statistics
University of Michigan

ABSTRACT

Iterated filtering algorithms are stochastic optimization procedures for latent variable models that recursively combine parameter perturbations with latent variable reconstruction. Previously, theoretical support for these algorithms has been based on the use of conditional moments of perturbed parameters to approximate derivatives of the log likelihood function. We introduce a new theoretical approach based on the convergence of an iterated Bayes map. A new algorithm supported by this theory displays substantial numerical improvement on computational challenges for inferring parameters of a partially observed Markov process.