Tópicos Avançados em Modelos Dinâmicos

Programa de Pós-Graduação em Estatística
Instituto de Matemática
Universidade Federal do Rio de Janeiro
Professor Responsável: Hedibert Freitas Lopes,Ph.D
Período: 12/09 - 26/04
Horário: Terças-feiras de 8:00 as 10:00 e Sextas-feiras de 10:00 as12:00
Local: B106A

- Modelos dinâmicos multivariados
  - Modelos dinâmicos de componentes comuns: Quintana and West (1989)
  - Modelos fatoriais dinâmicos (Aguilar and West (2000), Lopes and West (2000))
  - Modelos dinâmicos matriciais (Landim and Gamerman (1999))
- Modelos dinâmicos hierárquicos
- Inferência em modelos dinâmicos
  - Quadratura, Laplace, misturas
  - MCMC: Kitagawa (1987) *Non-Gaussian state-space modeling of non-stationary time series.*
  - MCMC: Carlin, Polson and Stoffer (1992) *A Monte Carlo approach to nonnormal and nonlinear state-space modeling.*
  - MCMC: Carter and Kohn (1994) *On Gibbs samplinf or state space models* e Frühwirth-Schnatter (1994) *Data augmentation and dynamic linear models*
  - MCMC: Shephard (1994) *Partial non-Gaussian state space models* e DeJong and Shephard (1995) *The simulation smoother for time series models*
  - MCMC: Dani (1998) *Markov chain Monte Carlo for dynamic generalized linear models*
- Modelos dinâmicos não-normais e não-lineares

- Gamerman
- Pitt and Shephard
- Knorr-Held

- Filtros de partículas

  1. West (1993) *Mixture models, Monte Carlo, Bayesian updating and dynamic models*
  2. Gordon Salmond and Smith (1993) *Novel approach to nonlinear/non-Gaussian Bayesian state space estimation*
  3. Kitagawa (1997) *Monte Carlo filter and smoother for non-Gaussian nonlinear state space models*
  4. Berzuini, Best, Gilks, and Larizza (1997) *Dynamic conditional independence models and Markov chan Monte Carlo methods*
  5. Carpenter, Clifford and Fearnhead (1999)
  6. Pitt and Shephard (1999) *Filtering via simulation: auxiliary particle filter*
  7. Chen and Liu (2000) *Mixture Kalman filters*
  8. Doucet, Godsill and Andrieu (2000) *On sequential Monte Carlo sampling methods for Bayesian filtering*
  9. Doucet, de Freitas e Gordon (2001) *Sequential Monte Carlo Methods in Practice*

- Stochastic volatility models, GARCH models, Markov Switching models,...