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Title: Bayesian model choice for finitely observed diffusion processes

Abstract: This talk illustrates how Bayesian model choice is possible for finitely observed diffusions. We adopt the approach set out in Roberts and Stramer (2001) and illustrate how this can be extended to the case of model selection via reversible jump MCMC. In addition we extend the formulation of a diffusion model to capture a potential non-Markov state dependence in the drift. Issues of appropriate choices of priors and efficient trans-dimensional proposal distributions for the reversible jump algorithm are also addressed. The approach is illustrated using simulated data and an example from finance.

This work is in collaboration with Gareth Roberts (Lancaster) and Petros Dellaportas (Athens).