

Simulation-Based Inference for Dynamical Systems Using `POMP` (Part one)

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Abstract:

This talk is the first in a series of two, regarding the theories and applications of Partially Observed Markov Process (POMPs). In the first talk, I will introduce POMP and how to formulate a POMP object for various dynamical systems, including epidemiological and ecological ones. I will also explore deterministic and stochastic formulations and develop inference methods appropriate for a range of models. Examples will be included to illustrate the statistical inference techniques and computational methods that are useful for inferring the dynamical systems of interest, via the R package ‘pomp’.