

1107-60-466

**Alexandra Chronopoulou\*** ([achronop@illinois.edu](mailto:achronop@illinois.edu)), Dpt of Industrial & Enterprise Systems Eng, 117 Transportation building, 104 South Mathews Avenue, Urbana, IL 61801. *Sequential Monte Carlo with Parameter Learning for Long-Memory Processes.*

We consider a state-space model that is specified up to an unknown vector of parameters and in which the unobserved state process exhibits long-memory. Our goal is to estimate both the state process and the parameter vector. For this, we propose a sequential Monte Carlo method that is based on smoothing of the sample points of model parameters. We establish a central limit theorem for the state and parameter filter and we illustrate our results with a simulation study. Finally, we apply our approach to S& P 500 data in the context of a stochastic volatility model with long memory. This is joint work with Konstantinos Spiliopoulos (Boston University). (Received January 20, 2015)