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MATLAB CODE FOR:

Tractable latent state filtering for non-linear DSGE models using a second-order approximation

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Other researchers may use (and further develop) this code, provided proper credit is given.

Copy all attached files to the directory used for running MATLAB procs.

1) Procs used for RBC model

RBCmodKQ_web.m: the main proc that solves the RBC model, generates simulated time series, and applies the three filters discussed in the paper: KalmanQ, PF(p) [particle filter with 'p' particles], KalmanL.

RBCmodf.m: the RBC model equations.

The model is solved using Chris Sims' proc gensys2.m.

gensys2_TO_KALMANQ: this proc takes the output of gensys2, and produces the matrices F0,F1,F2,F11,F12 and F22 of the second-order accurate model, in the format of the solution used in the paper (see equation (4)).

gensys2_moments.m: this proc computes first and second moments of the state vector.

gensys2_HPmoments.m: computes first and second moments of the HP filtered state vector.

arsimqL_STACK.m: this proc simulates the second-order accurate model.

These procs generates filtered estimates using the KalmanQ filter, the KalmanL filter, and the particle filter: KALMANQ_FILTER.m, KALMANL_FILTER.m, PARTICLE_FILTER.m

2) Proc used for model with randomly drawn coefficients:

GENmodKQ.m