Lecture 9.1 (11:45-12:10)

Skewed Kalman Filter/Smoother and Its Application

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As an extension of linear state space model, Naveau et al.(2005) proposed skewed state space model that allows one of the decomposed time series to follow some asymmetric distribution. Assumed class of distribution is called closed skew normal (CSN) which includes normal distribution as a special case. The extended algorithm is called skewed Kalman filter (SKF). In this presentation, we show fixed interval smoothing algorithm for SKF which is seemingly missed in the literature and apply it to daily commodity future time series obtained from Tokyo Commodity Exchange.