A BUGS Implementation of a Kriged Kalman Filter Model

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We discuss here a Bayesian formulation of the Kriged Kalman filter (KKF) model introduced in Mardia et al (1998). Certain parameters in the system equations of the KKF model are obtained priori from the STARMA type approach. These are then used to simplify the implement of the Bayesian KKF model in WinBUGS. This method is illustrated through a set of Kuwaiti environmental data.

The state-space approach is one of the most powerful tools for dynamic modeling and forecasting of time series and longitudinal data. The Kriged Kalman filter (KKF) model is a state-space model presented in Mardia et al (1998). In this poster, a form of the KKF model is applied on the Kuwaiti environmental data.

This set of data consists of the readings of carbon dioxide levels for 457 days from six different sites around the State of Kuwait as shown in Figure 1.

![Figure 1: The positions of the stations where pollution levels are monitored in Kuwait](image)

**Figure 1:** The positions of the stations where pollution levels are monitored in Kuwait

**References**


