State Space GARCH Model and its Applications

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We present a new approach to modelling non-stationarity in EEG time series by a generalized state space approach. A given time series can be decomposed into a set of noise-driven processes, each corresponding to a different frequency band. Non-stationarity is modelled by allowing the variances of the driving noises to change with time, depending on the state prediction error within the state space model. The method is illustrated by an application to EEG data recorded during the onset of anaesthesia.

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