Regime Change Detection in Irregularly Sampled Time Series

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Irregular sampling is a common problem in time series analysis. We propose a method that provides regularly sampled time series and at the same time a difference filtering of the data [1]. The differences between successive time instances are derived by a transformation costs procedure. A subsequent recurrence analysis is used to investigate regime transitions. This approach is applied on speleothem based palaeoclimate proxy data from the Asian-Australian monsoon region. Finally we clearly identified a giant see-saw relationship between East Asian and Australian summer monsoon activity [2].

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