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Subsampling confidence bands for trends in atmospheric time series

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Assessment of trends is an important problem in time series analysis, particularly in its weather and climate applications. In the talk, construction of simultaneous confidence bands for the unknown trend will be considered for a time series that can be modeled as a sum of two components: deterministic (trend) and stochastic. The stochastic component is a zero-mean stationary process (not necessarily an iid noise as is often assumed). The trend may be recovered by kernel, spline, wavelet and local linear methods, with confidence bands quantifying the associated uncertainty. When dependence is present, constructing confidence bands becomes a difficult problem. It will be addressed non-parametrically via the subsampling method. The procedure will be illustrated with modeled and observed data.
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