Bayesian isotonic changepoint analysis

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Abstract A general approach to Bayesian isotonic changepoint problems is developed. Such isotonic changepoint analysis includes trends and other constraint problems and it captures linear, non-smooth as well as abrupt changes. Desired marginal posterior densities are obtained using a Markov chain Monte Carlo method. The methodology is exemplified using one simulated and two real data examples, where it is shown that our proposed Bayesian approach captures the qualitative conclusion about the shape of the trend change.

Keywords Bayesian inference · Change point problem · Isotonic regression · Order restricted inference