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Spatiotemporal trend of extreme monthly precipitation of the USA.

Changes in extreme precipitation are associated with changes in their probability distributions and the characteristics of quantiles derived from fitted distributions. In this study, the Bayesian linear quantile regression method is employed to analyze spatiotemporal trends of monthly extreme precipitation in the United States. Monthly total maximum precipitation over the period of 65 years (1950 -2014) for 1108 sites was used for the analysis. Our results show that changes in upper quantiles of the distributions of the extreme precipitation have occurred in the Southeastern United States and at a much higher rate. In addition, north west region seems to encounter extreme draught specially some part of California. Such results are particularly useful for water managers who are more concerned with extreme values rather than the averaged one. Our study has significant implication in environmental and infrastructural assessment as well as disaster risk management. (Received September 20, 2018)