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# Time series methods applied to climate change

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Pierre Perron, Eduardo Zorita. 2017. "TIME SERIES METHODS APPLIED TO CLIMATE CHANGE." pp. 639.

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## **Time series methods applied to climate change**

This section of the volume presents a trio of papers dealing with time series methods applied to climate change problems. This field of work has received considerable interest lately and it is encouraging to see the development of collaborations between statisticians, econometricians and climate scientists, as well as the dissemination of methods across fields. The Journal sent a general call for papers inviting submissions that would fit in this research agenda. Not counting the number of screen rejections, seven papers were evaluated via the regular review process using the normal standards of excellence of the Journal. In the end, three were selected for publication. These three papers represent an interesting array of interactions across fields. First, two econometricians (Vogelsang and Nawaz) develop new statistical tools to investigate issues related to inference about the ratio of trend slopes, with applications to the rate of warming in the lower-troposphere relative to the surface. Second, statisticians (Guillaumin and co-authors) propose a class of univariate nonstationary time series models using the framework of modulated time series to analyze global ocean circulation. Third, a climate scientist and an econometrician (Estrada and Perron) pair up to use methods, recently developed in econometrics, to extract and analyze the statistical properties of the warming trend in global and hemispheric temperatures including an investigation of the source of the so-called recent hiatus. We think that these papers offer useful contributions to issues related to climate change and, more generally, that such cross-disciplinary work should be further encouraged.

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