Special Issue

Application of Non-linear Approaches and Frequency Analysis in Characterization and Prediction of Rainfall Data

Message from the Guest Editor

The main aim of this Special Issue is to gather recent studies on rainfall modeling and prediction using frequency analysis and nonlinear approaches such as spectral, wavelet or multifractal analyses, as well as neural networks techniques. We particularly seek contributions on, but not limited to, the following topics:
- Rainfall forecasting at different timescales. Quantitative forecasts are highly desired. What advances have been made in this area? How can machine learning and deep learning approaches enhance forecasts compared to other methods? Multiscale analysis, wavelet analysis, as well as other techniques that can be combined with neural networks modeling, can be studied;
- Rainfall extreme values. Intensity–duration–frequency models and the impact of climate change in these relationships. Scale-invariance methods, multifractal analysis and other techniques. What improvements can be carried out?
- Rainfall behavior characterization. Multiscale approaches, temporal and spatial trends at different timescales. Application of this knowledge to crucial sectors such as agriculture, energy or civil engineering.

Guest Editor

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Deadline for manuscript submissions

closed (10 August 2021)

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About the Journal

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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