Special Issue

Addressing Climate Change with Artificial Intelligence Methods

Message from the Guest Editor

In recent years, however, this complexity has also been addressed via the use of data-driven methods—artificial intelligence (AI) techniques in particular—as alternatives or complementary to dynamical models. The former applications include attribution or prediction studies (about global warming, but also individual phenomena), as well as research into large datsets using deep learning; the latter uses involve downscaling or finds application to specific impact studies, such as hydrological or extreme-event invesitfations. AI applications have shown also their usefulness in terms of extracting knowledge from large datasets (e.g., sets of satellite data) or addressing the social and economic impacts of climate change, as in cases of human migration. Relevant topics of the call include (non-exhaustive list):

- Detection and attribution of climate change by AI methods;
- AI downscaling of dynamical models for obtaining better reconstruction of the past and/or prediction of high-resolution future scenarios;
- Prediction through pure AI methods;
- AI in the study of extreme events;
- AI in impact studies (general or case studies in all possible applications).

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Climate (ISSN 2225-1154) was established in 2013 to provide an open-access outlet for innovative research, review articles, new direction papers, and short communications relevant to all disciplines related to climate at all scales. The journal encourages papers ranging from climate change detection and attribution and Earth system modeling to ecosystem, hydrologic, and socioeconomic impacts and climate mitigation and adaptation measures. The influence of *Climate* is strong and growing (IF 3.2 in 2024, CiteScore 5.7 in 2024).

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