

## Special Issue

# Forecasting Impacts of Air Pollution and Hydro-Meteorological Extremes: Models, Methods, and Applications

### Message from the Guest Editors

This Special Issue focuses on next-generation forecasting methods for air pollution and hydro-meteorological extremes, with emphasis on state-of-the-art ML/AI tools, physics-informed AI, hybrid dynamical-machine-learning frameworks, and post-processing of numerical weather prediction (NWP) and climate models. Topics of interest include, but are not limited to:

- ML/AI forecasting systems for extremes (e.g., LSTMs, Transformers, GNNs, Neural Operators);
- Physics-informed neural networks and hybrid dynamical-ML models;
- AI-based post-processing and bias correction of NWP/climate models;
- Extreme-value forecasting, tail modeling, and rare-event prediction;
- Generative AI, diffusion models, and ensemble surrogates for multi-lead-time forecasting;
- Uncertainty quantification, explainability, and model diagnostics;
- Spatio-temporal forecasting using Earth observation and remote sensing;
- Applications to air pollution, floods, droughts, heatwaves, tropical cyclones, and related extremes.

We look forward to receiving your original research articles and reviews.

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### Guest Editors

Dr. Chibuike Chiedozie Ibebuchi

Department of Mathematics, Morgan State University, Baltimore, MD 21251, USA

Dr. Richard Damoah

Department of Physics, Morgan State University, Baltimore, MD 21251, USA

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### Deadline for manuscript submissions

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## Forecasting

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*Forecasting*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[forecasting@mdpi.com](mailto:forecasting@mdpi.com)

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## About the Journal

### Message from the Editor-in-Chief

The new open access journal *Forecasting* provides an interdisciplinary forum for all aspects related to the immensely broad field of time series analysis and forecasting. The range of applications in forecasting is enormous, from energy forecasting or economic analysis of stock indices prediction, climate forecasting, chemical or natural process forecasting, etc. It is the aim of the journal to publish relevant topical contributions for the scientific community of forecasting in a timely manner. We would like to invite you to contribute to the journal by sending us your high quality research papers and would be pleased to welcome you as one of our authors.

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### Editor-in-Chief

Prof. Dr. Sonia Leva

Department of Energy, Politecnico di Milano, 20156 Milan, Italy

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 26.3 days after submission; acceptance to publication is undertaken in 3.5 days (median values for papers published in this journal in the second half of 2025).