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Impact-Based Forecast and Early Warnings from Meteorological Services

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Message from the Guest Editors

Extreme weather events such as extreme heat, heavy rain, and intense tropical cyclones are found to occur in many areas over the whole globe. The conventional weather forecast and warning services face significant challenges when it comes to such high-impact but low probabilistic events. Global climate change is adding to these complexities with processes likely to become more extreme, near linear dependences of variables becoming non-linear, and non-linear events becoming much more difficult to measure, model, and predict.

This Special Issue focuses on experience sharing of the development and implementation of impact-based weather forecast and early warning services. It will include the discussion of a number of extreme weather events, such as the definition of cold surges which is better aligned with human thermal perception and the consideration of flooding for rainstorm warning services. It is hoped that the Special Issue will provide a platform for showcasing the latest developments and operational implementation of impact-based weather forecasting and early warning services. Contributions on operational weather forecasting services are particularly welcome.