

## **IAMAS program M17 – High-impact Weather and Climate Extremes**

**Convenors:** Richard Grotjahn, Julia Keller

**Co-convenors:** Lisa Alexander, Brian Golding, Neil Holbrook, Richard Swinbank, Xuebin Zhang

Papers are solicited on topics related to understanding and prediction of weather and climate extremes. Observational, synoptic-dynamical, statistical, and modeling contributions are encouraged. Papers on topics relevant to the World Weather Research Programme project on High-impact Weather (HIWeather) and to the World Climate Research Programme Grand Challenge on Climate Extremes including cross-cutting themes are solicited.

Key challenges for the climate community are to document: how extremes have varied or are likely to vary under a changing climate and how well climate models capture these events. Presentations that assess: model simulations, changes in the observed record, and the extent to which humans are responsible for changes in extremes, and individual extreme weather events are encouraged. Weather extremes occur in various events over a broad range of time scales (e.g. heavy precipitation and drought, damaging winds, heat waves over land, marine heat waves, extreme winter events) and space scales (global to convective). Understanding underlying physical processes includes diabatic effects on meso- and synoptic-scale dynamics. Simulation, improved prediction, and deeper scientific understanding are key to increase resilience to high-impact weather events and are within the scope of this symposium. Contributions on observing strategies, field campaigns and demonstration projects, and dynamical and statistical analysis methods are solicited. Presentations on the communication of forecasts and their skill and uncertainties, weather impacts and on the assessments of vulnerability and risk are also sought.