



Extreme Convective Weather in Future Decades

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WISER (Weather Climate Change Impact Study at Extreme Resolution) is a project designed to analyse changes in extreme weather events in a future climate, using a weather model (WRF) which is able to resolve small scale processes. Use of a weather model is specifically designed to look at convection which is of a scale which cannot be resolved by climate models. The regional meso-scale precipitation events, which are critical in understanding climate change impacts will be analysed.

A channel domain outer model, with a resolution of ~ 20 km in the outer domain drives an inner domain of ~ 3 km resolution. Results from 1989-1994 and 2020-2024 and 2030-2034 will be presented to show the effects of extreme convective events over Western Europe.

This presentation will provide details of the project. It will present data from the 1989-1994 ERA-interim and CCSM driven simulations, with analysis of the future years as defined above. The representation of pdfs of extreme precipitation, Outgoing Longwave Radiation and wind speeds, with preliminary comparison with observations will be discussed.

It is also planned to use the output to drive the EFAS (European Flood model) to examine the predicted changes in quantity and frequency of severe and hazardous convective rainfall events and leading to the frequency of flash flooding due to heavy convective precipitation.