

EGU2020-2361

<https://doi.org/10.5194/egusphere-egu2020-2361>

EGU General Assembly 2020

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Using a convection permitting model ensemble for projecting future change in high-impact events

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For the first time internationally a model at a resolution on par with operational weather forecast models has been used for national climate scenarios. As part of the UK Climate Projections (UKCP) project, an ensemble of 12 projections at 2.2km resolution have been carried out over the UK. These were launched in September 2019, with the aim of providing an improved simulation of extreme precipitation and also other high-impact events at local scales for the coming decades. At such high (2.2km) resolution, convection can be represented explicitly ('permitted') without the need for a parameterisation scheme, leading to a much more realistic representation of hourly precipitation characteristics, including extremes. In this talk initial results from the UKCP local (2.2km) projections will be presented. This includes new understanding of changes in winter mean precipitation, as well as projected changes in hourly precipitation extremes and the frequency of hot spells. I will also discuss remaining outstanding issues and the future outlook for convective-scale climate modelling.