



## **Impact of different convection permitting resolutions on the representation of heavy rainfall over the UK**

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The convection parameterisation schemes used global and regional climate models (with grid spacings of order 10-100 km) are a known source of model deficiencies, leading to errors in the diurnal cycle of summer precipitation and an underestimation of hourly precipitation extremes. As grid spacings approach the km-scale, the so-called “convection permitting” scale, it is possible to represent deep convection explicitly. Previous studies (e.g. Ban et al, 2015; Fosser et al, 2015; Kendon et al, 2015) have show that these convection permitting models are able to give a much more realistic representation of convection, and are needed to provide reliable projections of future changes in hourly precipitation extremes.

In this context, the UKCP18 project aims to provide policy makers with new UK climate change projections at hourly and local scales, thanks to the first ensemble of runs at convection permitting resolution. This study outlines the benefits of convection-permitting resolution in terms of the representation of heavy rainfall, and investigates the impacts of different convection permitting resolutions as well as the domain size.

### **Bibliography**

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