



Extratropical cyclones and extreme precipitation in high-resolution global climate models

Alexander Baker (1), Reinhard Schiemann (1), Kevin Hodges (1), Malcolm Roberts (2), and Pier Luigi Vidale (1)
(1) National Centre for Atmospheric Science, University of Reading, Reading, United Kingdom
(alexander.baker@reading.ac.uk), (2) Met Office, Exeter, United Kingdom

Extratropical cyclones are the primary natural hazard affecting much of Europe. Such systems are responsible for 70-85% of winter precipitation, including many high-impact extreme events. We evaluate the representation of extratropical cyclones and their associated precipitation over the Euro-Atlantic region across an ensemble of historical atmosphere-only and coupled high-resolution (~25 km) global climate model simulations, run following the HighResMIP protocol and collated under the aegis of the Horizon-2020 PRIMAVERA Project. Our complementary statistical and process-based model evaluations attempt to (i) characterise links between extreme precipitation and large-scale atmospheric variability and (ii) quantify the value and the role of high resolution in understanding Euro-Atlantic storminess.