

EGU2020-7676

<https://doi.org/10.5194/egusphere-egu2020-7676>

EGU General Assembly 2020

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



## Using PRIMAVERA high-resolution global climate models for European windstorm risk assessment in present and future climates for the (re)insurance industry

**Julia Lockwood**, Erika Palin, Galina Guentchev, and Malcolm Roberts

Met Office Hadley Centre, Exeter, United Kingdom of Great Britain and Northern Ireland ([julia.lockwood@metoffice.gov.uk](mailto:julia.lockwood@metoffice.gov.uk))

PRIMAVERA is a European Union Horizon2020 project about creating a new generation of advanced and well-evaluated high-resolution global climate models, for the benefit of governments, business and society in general. The project has been engaging with several sectors, including finance, transport, and energy, to understand the extent to which any improved process understanding arising from high-resolution global climate modelling can – in turn – help with using climate model output to address user needs.

In this talk we will outline our work for the finance and (re)insurance industries. Following consultation with members of the industry, we are using PRIMAVERA climate models to generate a European windstorm event set for use in catastrophe modelling and risk analysis. The event set is generated from five different climate models, each run at a selection of resolutions ranging from 18-140km, covering the period 1950-2050, giving approximately 1700 years of climate model data in total. High-resolution climate models tend to have reduced biases in storm track position (which is too zonal in low-resolution climate models) and windstorm intensity. We will compare the properties of the windstorm footprints and associated risk across the different models and resolutions, to assess whether the high-resolution models lead to improved estimation of European windstorm risk. We will also compare windstorm risk in present and future climates, to see if a consistent picture emerges between models. Finally we will address the question of whether the event sets from each PRIMAVERA model can be combined to form a multi-model event set ensemble covering thousands of years of windstorm data.