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Engagement with the finance and insurance industry for the PRIMAVERA project: Analysis of European wind storms for catastrophe modelling

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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. We found one of their main concerns was estimating risk from European wind storms, the costliest natural hazard over Europe. A common technique used to assess this risk is catastrophe modelling, where wind storm 'footprints' are combined with exposure and vulnerability information to estimate insured losses. In order to estimate insured losses over long return periods, as required by European regulation, catastrophe modellers have to augment observational records by creating simulated wind storm footprints using statistical or dynamical (climate) models. The CMIP5 generation of climate models suffered from wind storms being too low in intensity and an Atlantic storm track which was too zonal, so footprints generated from these models required complicated bias correction techniques to be adapted for use in catastrophe models.

These biases are reduced in the high-resolution PRIMAVERA models which could lead to improved estimations of European wind storm risk. We will compare the properties of wind storm tracks and footprints across different resolutions and from different models, and the implications of these differences on estimated insured losses. We will also discuss our engagement with the industry through surveys, interviews and webinars, and the difficulties in bridging the gap between climate modellers and industry.