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Estimation of Hail Risk in the UK and Europe

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Observations of hail events in Europe, and the UK especially, are relatively limited. In order to determine hail risk it is therefore necessary to use information other than relying purely on the historical record. One such methodology is to leverage reanalysis data, in this case ERA-Interim, along with a numerical model (WRF) to recreate the past state of the atmosphere. Relevant atmospheric properties can be extracted and used in a regression model to determine hail probability for each day contained within the reanalyses.

The results presented here show the results of using a regression model based on convective available potential energy, deep level shear and weather type. Combined these parameters represent the probability of severe thunderstorm, and in turn hail, activity. Once the probability of hail occurring on each day is determined this can be used as the basis of a stochastic catalogue which can be used in the estimation of hail risk.