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Ensemble forecast tools for weather warning production

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Weather warnings are issued according to the likelihood and potential impact of some weather event. Ensemble forecasts are ideal for this purpose, as they describe the uncertainty around a particular outcome. However, since this data is difficult to analyze using traditional visualization techniques it may not always be used optimally. Assessing the potential impact also poses a challenge, since it relies on various sources of information besides weather data, which may themselves be uncertain.

These considerations have led to the development of prototype tools providing hints for weather warnings. This work involves several components. The first of these is determining suitable statistical analyses for the ensemble forecast data. Another is modelling the non-weather drivers of impact, such as population density or projected road use. Yet another is developing a display language that makes the data simple to interpret intuitively, but still allows the user to drill down in order to verify the tool's conclusions.