



Ensemble versus deterministic performance: what are the benefits for thresholds of interest from a weather hazards/impacts perspective

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At the Met Office a fully probabilistic "High Resolution Assessment" or HiRA framework is currently being adopted for the monitoring of both deterministic and ensemble NWP at the km-scale. The framework considers six different variables, at a variety of neighbourhood sizes, and is based on the use conventional meteorological observations from observing sites. In this paper the 2.2 km MOGREPS-UK ensemble and the 1.5 km UKV deterministic Unified Model configurations are compared to consider how forecast performance has been evolving since MOGREPS-UK was first introduced as a demonstrator for the London 2012 Olympics. One of the reasons we run km-scale NWP is the enhanced ability of capturing peaks or extremes in the forecast which may be associated with hazards or impacts. The analysis focuses on the key thresholds and parameters which may lead to, for example, hazardous driving conditions (ice), and disruption to aviation through low visibility or cloud ceiling. The results show that some meteorological parameters remain challenging but that forecast quality is improving slowly. It again highlights that the skill of the forecasts can be optimised by using what the verification says is the optimal spatial resolution for obtaining maximum skill.