NOWCASTS OF CONVECTIVE PRECIPITATION USING AN OBJECT-ORIENTED LIFE CYCLE MODEL OF A CONVECTIVE CELL

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The UK Meteorological Office, in collaboration with the Environment Agency for England and Wales, has recently completed extensive operational trials of an object-oriented convective model (or OOM). These trials have demonstrated the reliable production of very short range (0-3 hours ahead), high-resolution (10 minute time step, 2km resolution) precipitation forecasts during periods of airmass convection by the OOM. The model has been implemented operationally within an automated nowcasting system known as GANDOLF (Generating Advanced Nowcasts for Deployment in Operational Land-based flood Forecasts). This system is designed to run the OOM when conditions suit, during which the OOM runs on a 15-minute cycle, and generates 10-minute instantaneous rain rate and 15 minute accumulation forecasts. These forecasts are relayed directly to Flood Warning Centres, where they can be used in river flow modelling and flood prediction.

This presentation will briefly review the design of the OOM and present case study material to demonstrate the model's behaviour. Proposed improvements to the OOM will be discussed. A short report on proposed future work in the new Joint Centre for Hydro-Meteorological Research, set up with staff from the UK Met. Office and the National Environment Research Council's, Institute of Hydrology, will also be presented.