



## **Performance of the Met Office's convection permitting models on the Winter 2013-2014 severe weather events over the UK.**

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The winter of 2013-2014 has been notorious in the UK for the unusual number of severe weather events. The period from the 5th of December to the 5th of January saw seven deep low pressure systems cross the UK: On the 5th of December near 20 stations, mountain top excluded, reported gusts exceeding 70 knots (36 m/s) and a storm surge reaching up to 2 m. above the astronomical tide prompted the evacuation of thousands of residents in vulnerable areas and the deployment of the Thames Barrier; travel and electricity supply in Scotland was severely disrupted. Scotland was also affected by the following storm on the 18th - 19th of December and Southern England suffered the effect of the next one on the 23rd - 24th with wind damage and river and surface flooding. The stormy weather continued on the 26th and 27th and again on New Years Eve first in Wales and then Scotland; the systems in early January 2014 brought flooding to the West Midlands and Somerset.

After around two weeks of relatively benign weather, a succession of 6 major storms separated by 2-3 days followed up to the 12th of February. With rain falling in already saturated ground and coastal defenses battered by previous storms, widespread flooding and damage to the coastal infrastructure ensued.

The Met Office has a long term strategy towards convection permitting models for improved short range NWP guidance, particularly of severe weather events and, within this framework, has been using operationally since 2009 a 1.5 Km gridlength deterministic model over the UK. More recently a 12 member ensemble at a slightly coarser resolution (2.2 Km gridlength) has been installed and, although limited in number of members by computing resources, has proved its usefulness in several occasions. This presentation analyses the performance of these systems on the severe weather events of this remarkable winter.