

Convective-scale ensemble forecasting activities at the Met Office.

Stuart Webster, Met Office, UK.

Abstract

This presentation will give a brief overview of the various convective-scale ensemble forecasting activities that are currently ongoing at the Met Office.

We will firstly describe the recent developments to the operational convective-scale ensemble prediction system for the UK (known as MOGREPS-UK). Both strengths and weaknesses of the current system will be illustrated, and then both current and future work to address these weaknesses will be described.

We will then present results from four ongoing research activities that the Met Office is participating in. The first of these is the NOAA-led Hazardous Weather Testbed in which, in 2019, the Met Office ran a real-time convection permitting ensemble system over the US for the first time (as opposed to running a single deterministic forecast). The second activity is the on-demand real-time forecasting for Atlantic tropical cyclones, which has been run for the last 3 years in support of the UK overseas territories in the Caribbean. The third is a UK Newton Fund project, WCSSP SE Asia, in which real-time ensemble forecasts are being routinely run over SE Asia. The fourth is the UK GCRF Africa-SWIFT project, which is being led by the University of Leeds, and for which both real-time and case-study ensemble forecasts have been run for Tropical Africa.

We will conclude by summarising the common themes that are becoming apparent in these various activities and outline future work to further improve the convective-scale ensemble forecasting capability using the Unified Model.