

Séminaire vendredi le 13 mai 2016 11:00 / Seminar Friday May 13<sup>th</sup> 2016 11:00h

**\*diffusé par WEBEX à partir de la salle André Robert à la Place Bonaventure**

**\*broadcasted via WEBEX from André Robert boardroom from Place Bonaventure**

**Sujet/Subject:** *The ECMWF Integrated Forecasting System: recent progress, performance and products for global medium-range weather forecasts*

**Langue/language :** Anglais/English

**Conférencier/Lecturer:** David Richardson, ECMWF, UK

**Résumé/Abstract:**

The presentation will provide an overview of the European Centre for Medium-Range Weather Forecasts (ECMWF) Integrated Forecasting System (IFS), and discuss recent developments with a focus on model improvements, new products and new evaluation measures.

In March 2016 ECMWF upgraded the horizontal resolution of its forecasts, to about 9 km for the high-resolution forecast HRES, 18 km for the medium-range ensemble (ENS) up to day 15, then 36 km for the extended range (monthly). The resolution of the data assimilation also increased, to 9 km for the outer loop of the 4D-Var and to 18 km for the ensemble of data assimilations (EDA). The upgrade also included changes to the model physics and numerics, and the data assimilation.

The new model cycle improves the accuracy of forecasts by between 2 and 3 per cent for many parameters. The increased resolution leads to a better representation of coastlines and orography with the potential for improved local predictions. Changes in the radiation physics lead to particular improvements in near-coastal 2-metre temperatures in places where surface conditions vary abruptly. The structural representation of tropical cyclones is also improved with a more clearly defined eye and better-resolved rainbands. Tropical cyclone intensity is improved in ensemble forecasts.

Recent additions to model output parameters include fields that show instantaneous precipitation rate, precipitation type, instantaneous wind gusts and a visibility/fog diagnostic. The precipitation type diagnostic includes freezing rain and ice pellets. Ensemble products for severe weather were extended to include an Extreme Forecast Index (EFI) for severe convection.