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Operational Use of "ecPoint-Rainfall", a New Probabilistic Product for Rainfall Forecasts at Point-Scale

Fatima Pillosu (1,2) and Tim Hewson (1)
(1) ECMWF, Reading, UK, (2) University of Reading, Reading, UK

ECMWF is putting in operations a new post-processing system to produce global probabilistic rainfall forecasts at point-scale. The aim is to deliver reliable and skilful rainfall forecasts for localized heavy rainfall, and a long-term global verification has shown that the new post-processing system delivers greatly improved rainfall predictions up to medium-range lead times, and this is especially true for very large totals (e.g. 50mm/12h). Since the beginning of the project the focus was to develop a product to improve in particular the forecasts for rainfall events that result in disruptive flash floods. For this reason, the post-processing system has been developed with the collaboration of the European and Global Flood Awareness System (EFAS, GLOFAS), and at the moment the new post-processed rainfall product is under evaluation to determine the extent to which it can be used as a proxy for global flash flood forecasting and become a product on those platforms.
The new post-processing system is called ecPoint, and the specific branch of ecPoint that produces the post-processed rainfall forecasts is called ecPoint-Rainfall. In essence it accounts and adjusts for weather-dependant variations in sub-grid variability and gridbox-level bias. The ecPoint-Rainfall products are probabilistic, and the main output formats are currently maps that show, for a pre-defined period (e.g. 12h) percentiles (in mm), and probabilities (in %) of exceeding certain rainfall thresholds. Also available are comparative CDFs (point rainfall versus raw ensemble) for any lead time for anywhere in the world, which can help show to the user the difference that the post-processing makes, and fully explain how such differences arise.
The aim of this presentation is to illustrate to potential users how to make the best use of the probabilistic output of ecPoint-Rainfall. Recent case studies of extreme rainfall across the world will be presented, and examples for both types of products (i.e. percentiles and probabilities) are going to be shown. As extra "interactive" material during the presentation, it will be possible to view on a laptop real-time ecPoint-Rainfall outputs on ecCharts, the web-based platform developed at ECMWF to explore and visualise ECMWF forecast data. Thus, interested people will be able to see how to control accumulation periods, probability thresholds, percentiles, and many other interactive features from the main user interface of ecCharts.