Operational Use of New Probabilistic Forecasts of Rainfall at Points ("ecPoint-Rainfall")

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At ECMWF the output of a new real-time post-processing system for predicting rainfall at points ("ecPoint-Rainfall") is moving to operations. It takes as input forecasts of rainfall and other parameters from the ECMWF ensemble. The intention is that the output will also be included in the GLObal and European Flood Awareness Systems (GLOFAS and EFAS), as an aid to flash flood prediction. A key feature of the post-processing, exemplified in 1 year of global verification, is that it delivers greatly improved predictions of large, localised rainfall totals. The question then is how can customers make best use of the output?

This PICO presentation will include some references to the post-processing system and verification scores, but the focus will be on using case studies of extreme rainfall to illustrate how best to use the probabilistic output in an operational setting. This output applies to points within a model gridbox over a pre-defined period (e.g. 6h or 12h) and takes two main forms: probability of exceedance of a user-defined rainfall threshold (in %), and values for user-defined percentiles (mm). Examples of both will be provided. Methods for combining the output with static and dynamic vulnerability metrics (such as population density, slope, current soil moisture levels) in order to narrow down warning areas will be considered. There will also be reference to when to expect the point rainfall output to differ most from output of the raw ensemble.