



On the benefit of seamless forecast for hydrological application over Europe

Francesca Di Giuseppe and Fredrik Wetterhall
ECMWF, Reading, United Kingdom (francesca.digiuseppe@ecmwf.int)

Two different systems provide long range forecasts at ECMWF. On the sub-seasonal time scale, ECMWF issues an extended-range ensemble prediction system (ENS-ER) which runs a 46-day forecast integration issued twice weekly. On longer time scales the current seasonal forecasting system (SYS4) produces a 7-month outlook starting from the first of each month. SYS4 uses an older model version and has lower spatial and temporal resolution than ENS-ER. Given the substantial differences between the ENS-ER and the SYS4 configurations and the difficulties of creating a seamless integration, applications that rely on weather forcing as input such as the European Flood Awareness System (EFAS) often follow the route of the creation of two separate systems for different forecast horizons. This study evaluates the benefit of a seamless integration of the two systems for hydrological applications and shows that the benefit of the new seamless system when compared to the seasonal forecast can be attributed to (1) the use of a more recent model version in the sub-seasonal range (first 46 days) and (2) the much more frequent updates of the meteorological forecast.