EMS Annual Meeting Abstracts
Vol. 13, EMS2016-304, 2016
16th EMS / 11th ECAC

Operational hydro-meteorological monitoring and forecasts over France using the SAFRAN-SURFEX-MODCOU model chain

François Besson (1), Fabienne Regimbeau (1), Michèle Blanchard (1), Christian Viel (1), Pierre Etchevers (1), Mathieu Papazzoni (1), Anne-Lise Beaulant (1), Patrick Le Moigne (2), Eric Martin (3), and Florence Habets (4)

(1) DCSC, METEO FRANCE, Toulouse, France (francois.besson@meteo.fr), (2) CNRM, METEO FRANCE, Toulouse, France, (3) UR RECOVER, IRSTEA, Aix-en-Provence, France, (4) UMR 7619 METIS, CNRS, UPMC, Paris, France

Hydro-meteorological monitoring and forecast at Météo-France have relied on the physical-based model chain SAFRAN-ISBA-MODCOU (SIM) for more than ten years. In the meantime, numerous research studies were conducted to improve SIM model results. A new operational chain based on these improvements was designed and this new SAFRAN-SURFEX-MODCOU application was set up to produce reanalysis, real-time analysis, ensemble and seasonal forecasts.

The main changes of this new version consist in using up-to-date soil, vegetation and orography databases, tiling approach in mountainous areas, improving the downward longwave radiation forcing, the soil heat and water transfers based on a diffusive method, and the sub-grid hydrology by a simple representation of the groundwater based on reservoirs.

In this presentation we will describe this new model chain and its real-time operation. Then we will present medium range and seasonal hydro-meteorological forecast products tailored for specific end-users.