



Applying Era-Interim forcings to a conceptual model of hydrological processes: Calibration and evaluation for Europe

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Realistic (Era-Interim, EI) moisture flux convergence (F_q) and radiation (F_{rad}) are used to force a conceptual land-atmosphere model that was originally configured for the JJA season in Germany/France. In this improved setup, spatial variability is considered by applying the forcings to each $4.5^\circ \times 4.5^\circ$ grid box for Europe, whereas temporal variability is taken into account by imposing 20-years (1989-2008) daily variability of the forcings derived from EI. Differently from the original configuration, two atmospheric layers are added to the top of the boundary layer and F_q is integrated from 2 hPa to the surface. The precipitation parameterization, that was dependent on an empirical form of a precipitation efficiency function, is replaced by a more physical approach where the amount of water each layer can sustain without precipitating is related to humidity thresholds. With this setup, the main EI patterns of the modeled seasonal precipitation can be reproduced fairly well.