1 Supplement

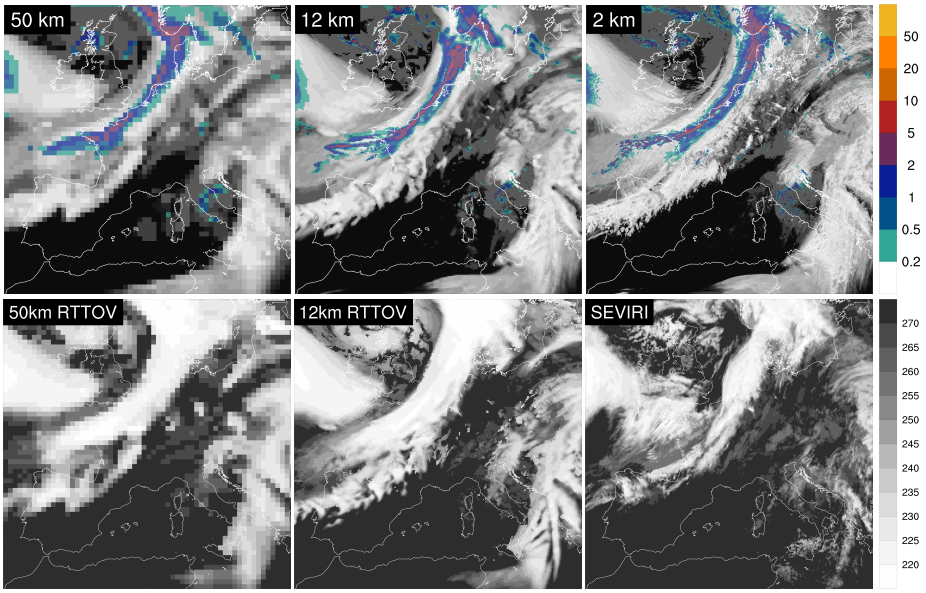

Figure 1: Snapshots on 17 January 2007 15:00 UTC from three week-long simulations with decreasing grid spacing. The synoptic situation shows a low-pressure system with a strong cold front. (top) The white shading is our visualization of cloud cover (see section 2.4.1) and the colored shading indicates the rain-rate [mm/h]. (bottom) Synthetic brightness temperatures computed by a satellite simulator (RTTOV) [K] and (bottom right) 10.8 μm brightness temperatures from the Spinning Enhanced Visible and Infrared Imager (SEVIRI) on the geostationary Meteosat satellite.

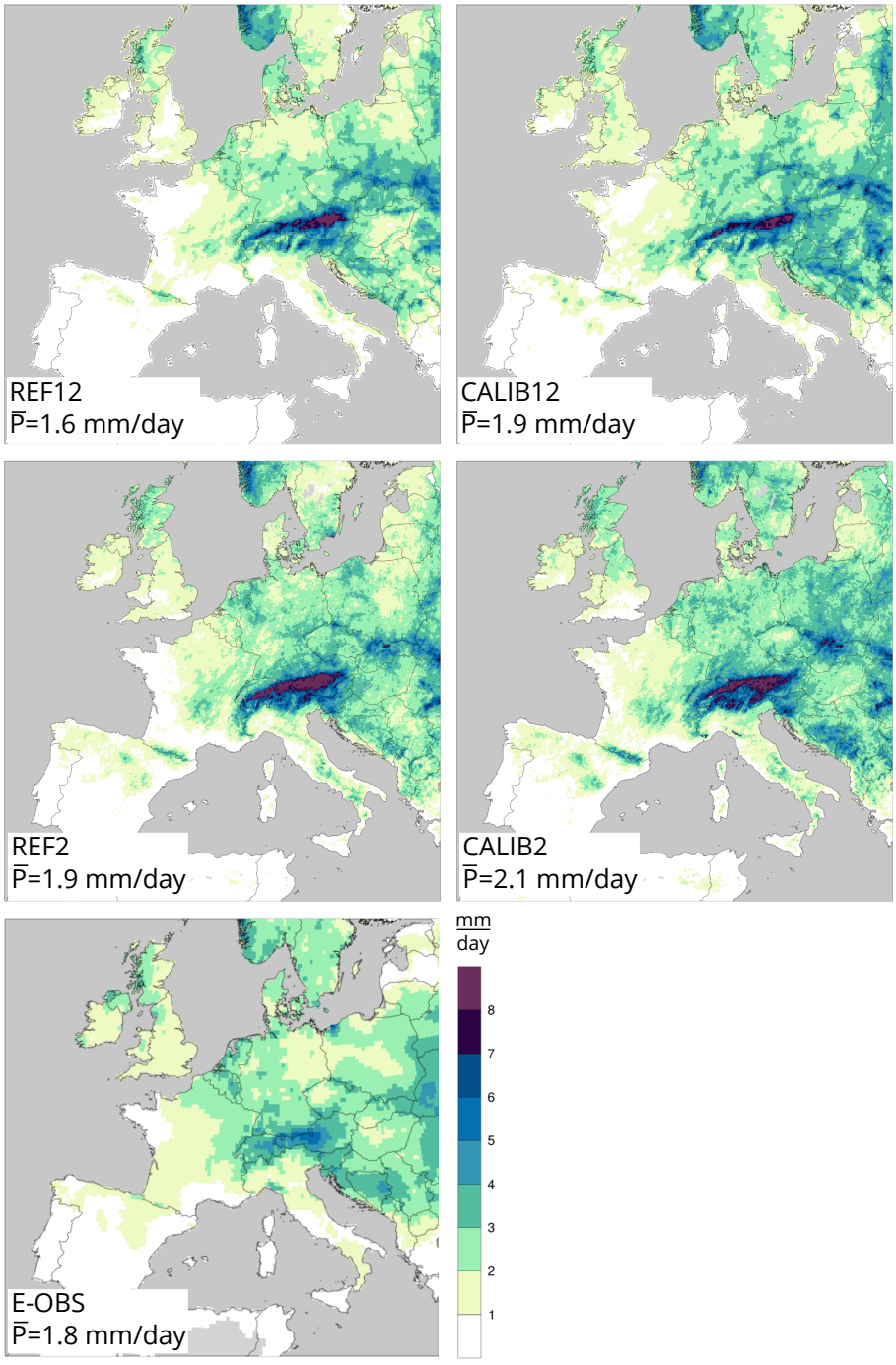

Figure 2: Seasonal mean precipitation in summer 2006 [mm/day] for simulations and observations (E-OBS). REF denotes the simulations following the calibration used by Ban et al. (2014) and CALIB the simulations following the calibration by Bellprat et al. (2016).

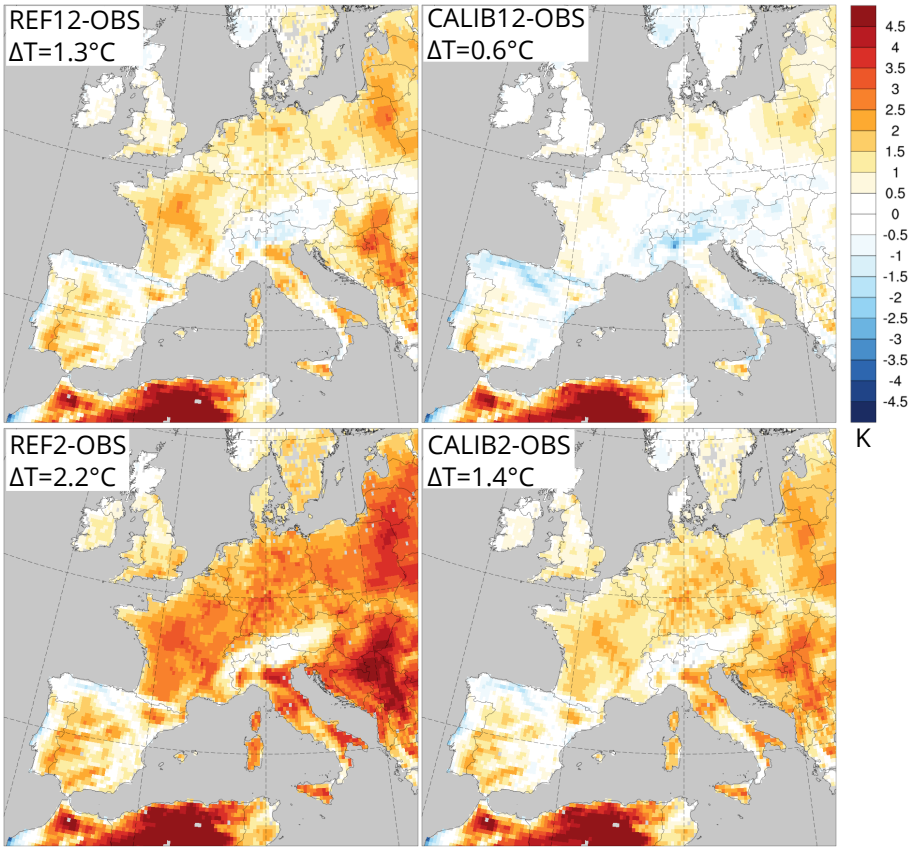

Figure 3: As figure 14, but for Seasonal mean 2m temperature bias relative to E-OBS [° C]