



A cross-assessment of CCI-ECVs and RCSM simulations over the Mediterranean area

Miriam D'Errico, Serge Planton, and Pierre Nabat

Météo-France, CNRS/CNRM, UMR3589, Toulouse, France (miriam.derrico@meteo.fr)

A first objective of this study, conducted in the framework of the Climate Modelling Users Group (CMUG), one of the projects of the European Space Agency Climate Change Initiative (ESA CCI) program, is a cross-assessment of simulations of a Med-CORDEX regional climate system model (CNRM-RCSM5) and a sub-set of atmosphere, marine and surface interrelated Satellite-Derived Essential Climate Variables (CCI-ECVs) (i.e. sea surface temperature, sea level, aerosols and soil moisture content) over the Mediterranean area. The consistency between the model and the CCI-ECVs is evaluated through the analysis of a climate specific event that can be observed with the CCI-ECVs, in atmospheric reanalysis and reproduced in the RCSM simulations. In this presentation we focus on the July 2006 heat wave that affected the western part of the Mediterranean continental and marine area. The application of a spectral nudging method using ERA-Interim reanalysis in our simulation allows to reproduce this event with a proper chronology. As a result we show that the consistency between the simulated model aerosol optical depth and the ECV products (being produced by the ESA Aerosol CCI project consortium) depends on the choice of the algorithm used to infer the variable from the satellite observations. In particular the heat wave main characteristics become consistent between the model and the satellite-derived observations for sea surface temperature, soil moisture and sea level. The link between the atmospheric circulation and the aerosols distribution is also investigated.