Geophysical Research Abstracts,
Vol. 11, EGU2009-8560, 2009
EGU General Assembly 2009

Climate scenarios for the Mediterranean basin with a coupled regional system.

V Artale (1), S Calmanti (1), A Carillo (1), A DellÁquila (1), G Pisacane (1), PM Ruti (1), G Sannino (1), MV Struglia (1), F Giorgi (2), and X Bi (2)

(1) ENEA, Environment and Climate Change, Roma, Italy (paolo.ruti@casaccia.enea.it), (2) ICTP, Trieste, Italy

At present fully coupled regional climate models are being developed, so that the interactions among the components of the climate system (i.e. ocean, atmosphere, biosphere and sea-ice) are explicitly simulated. Such models are also expected to improve the representation of the present and future water cycle over complex regions such as the Mediterranean area, which is subject both to the influence of global scale dynamics (e.g. disturbances in the mid-latitudes, strength and meridional extension of the Hadley circulation), and to the effects of local physical processes (complex topography, local evaporation).

We developed a Regional Earth System Model for the Mediterranean basin. The system consists of the RegCM (atmospheric model), the MITgcm (ocean model), coupled via OASIS3. In order to taking into account all the components of the water cycle, in particular river-runoff, we have developed and included a catchment-river module.

Here, we would like to present the simulations performed for the XX and XXI centuries within the framework of the CIRCE project. We have performed coupled and stand-alone simulations using ECHAM5 forcing as lateral boundary condition.