



Description of the EBU-POM coupled regional climate model and results from time-slice experiments for Europe region.

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This work presents a coupled regional climate model (RCM) and some of its results from climate change time-slice experiments. EBU-POM is a two-way regional coupled model, with Eta/NCEP limited area model as its atmospheric part and Princeton Ocean Model as its ocean part. Both models are well known and have been extensively verified, Eta was operational model in NCEP for many years and POM is one of most used models for scientific investigations but also for operational ocean forecasts. Exchanges of atmosphere fluxes and SST between the two components are done interactively, during integration, using specially designed coupler software that takes into account difference in the respective resolutions. The ocean model has roughly four times higher resolution. In every physical time step of the atmospheric model, surface atmosphere fluxes, needed for the ocean forcing, are transferred to ocean model grid, and after that SST is transferred back onto atmosphere model grid, serving as the new bottom boundary condition.

In this study RCM domain covers Europe region, with atmospheric model horizontal resolution about 22km and 32 vertical levels. Two-way coupled scheme was only applied over the Mediterranean sea. For other water bodies (Atlantic ocean and the Black sea) we have used SST from the global model integrations as a bottom boundary condition of the atmospheric model.

Experiments we present here are an analysis of climate change scenario using RCM nested within time-slice integration of atmospheric global circulation model (AGCM). Focus will be on changes of seasonal mean 2m temperature and precipitation pat-

terns for 30 years period of 2071-2100 with respect to the present climate period of 1961-1990. As a lateral boundary condition, for the RCM, we have used integration of present day climate and A1B scenario for 21st century climate, from SINTEXG AGCM. As the initial fields for ocean model we have used MODB data set for present day climate integration and for 21st century integration we have used initial data from ocean part of AGCM.