



The Baltic Sea Coupled Regional Modeling System - BALTIMOS

D. Jacob and P. Lorenz

Max Planck Institute for Meteorology, Hamburg, Germany (philip.lorenz@dkrz.de)

A major task of the BALtic Sea EXperiment (BALTEX) is the simulation of the water and energy cycle within the Baltic Sea catchment to identify important processes, which are relevant to the climate in the Baltic region. Within the framework of BALTEX a fully coupled regional climate model system for the Baltic Sea region called BALTIMOS has been developed, funded by the German Climate Research Program DEKLIM. For this purpose existing model components for the atmosphere (model REMO), for the ocean including sea-ice (model BSIOM), for the hydrology (model LARSIM) as well as for lakes (model SiT) were coupled. The horizontal resolution is $1/6^\circ$ (~ 18 km) for the atmospheric and hydrological components, and 5 km for the ocean/sea-ice components. The coupling time step between all components is 1 hour. As atmospheric lateral boundary forcing analysis of the European Centre for Medium-Range Weather Forecasts (ECMWF) were used until now.

In order to estimate the added value of the described coupled regional model system in simulating today's climate, multi year simulations of both the coupled BALTIMOS system and the stand-alone REMO model have been carried out. In the REMO simulation the sea surface temperature (SST) analysed by the ECMWF was prescribed. The atmospheric results of these simulations are compared against each other and against observations as far as reasonable.

It will be shown that for some quantities of the hydrological cycle the scores given by a detailed model validation strategy have been reached, while others need improvement.

The coupled model system as well as the validation strategy have been developed within the BALTIMOS consortium, which will be introduced in this contribution (<http://www.baltimos.de>).