



Validation of the REMO regional climate model for the past climate over the Carpathian Basin

G. Szépszó

Hungarian Meteorological Service, Budapest, Hungary (szepszo.g@met.hu)

Nowadays the global climate models developed and exploited by the world climate centres are rather reliable for providing realistic projections for the synoptic scale patterns and evolution of the climate, however they are insufficient for detailed regional scale estimations. There are several methods to interpret the results of these global coupled atmospheric-ocean general circulation models for regional scale - most recently the dynamical downscaling of the global results with the use of regional (limited area) climate models is the most widely-applied procedure.

A couple of years ago two regional climate models were adapted at the Hungarian Meteorological Service: the ALADIN/Climate model developed by Météo France on the basis of the internationally developed ALADIN modelling system and the REMO model developed by the Max Planck Institute for Meteorology (MPI-M) in Hamburg. It is anticipated in Hungary that these models will be able to give realistic regional climate estimations for the next few decades particularly for the area of the Carpathian Basin. This latter aspect is essential especially considering that one of the largest climate projection uncertainties can be found over the Carpathian Basin as it was already identified by several large international climate projects (PRUDENCE for instance).

Various versions of the REMO model had already been tested all over the world for different geographical domains and for different past periods, however recently further validations and tests had been starting also at the Hungarian Meteorological Service (HMS). In two longer simulations the impact of the lateral boundary forcings were investigated: in one case the ERA40 data was used as the LBC-s and in another case the global ECHAM5/MPI-OM control run provided the lateral boundary forcings. The

simulations were achieved for a domain covering Central and Eastern Europe with 25 km horizontal resolution. The model results were compared to various gridded observational datasets: on the one hand to the CRU-dataset over Europe and on the other hand to the gridded Hungarian database of 0,1 degree resolution over Hungary. The presentation is going to briefly summarise the first validation experiments of the REMO model in Budapest.