



Large-scale consistency with driving GCM and fine scale details in the present-day climate simulated by the ENSEMBLES RCM integrations

Erasmo Buonomo

Met Office - Hadley Centre, Exeter, United Kingdom (erasmo.buonomo@metoffice.gov.uk)

The EU project ENSEMBLES has produced two sets of RCM integrations, driven by ECMWF ERA-40 reanalysis and by a small set of GCMs respectively. In particular, the set of GCM-driven simulations has been designed with the aim of exploring the model uncertainty to both GCM and RCM formulations.

The analysis of the consistency of RCMs with the driving boundary conditions at the larger scale, implicitly assumed to be satisfied in the "one-way" nesting approach, has been studied for both sets.

The results indicate that the dependence of the degree of consistency on the GCM formulation could be neglected as a first order approximations. Furthermore, the preliminary analysis of the finer scale (i.e. those explicitly resolved by the RCMs) indicates a stronger dependence of the RCM formulations, with a weaker dependence on the driving boundary conditions.

These results support the assessments of the multi-model uncertainty based on experimental design whereby RCM and GCM are treated as independent factors (GCM/RCM matrices). Details from the analyses and their implications for the assessment of multi-model uncertainty will be presented at the conference.