



AMIC Project: Comparison of WRF High Resolution Dynamical Downscaling of ERA-Interim and EC-Earth for Azores Islands

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Project AMIC integrates the Portuguese members of the new EC-Earth climate modeling consortium. The aim is to contribute to the IPCC fifth report with a significant set of simulations with a state of the art model, while giving the group timely access to the complete ensemble of simulations for diagnostic studies, and regional downscaling. Additionally, Project AMIC will produce a new set of high resolution simulations of the Portuguese islands climate, using a state of the art model (WRF) at 6km horizontal resolution, with boundary conditions from the new ERA-Interim reanalysis (1989-2009) and from the EC-Earth decadal (20 year) runs. These simulations will allow for validation of the downscaling methodology, and will characterize both the current and near future climate.

This study aims to compare two present day climate high resolution dynamical downscaling WRF simulations for the Portuguese islands of Azores using the ECMWF ERA-Interim reanalysis and the EC-Earth v2.3 boundary conditions for the period 1989-2010. In small volcanic islands the local scale climate is influenced by the regional scale climate and by the orography and orientation of air masses over the islands. In these environments the climatological conditions are a vital importance for the local agriculture and water management. With this study we aim to see how well the dynamical downscaling using EC-Earth v2.3 behaves when put against to the ERA-Interim reanalysis. To achieve this goal results from both simulations are compared against with the available observation network in both islands. This study results will show us what kind of deviations we can expect for the future scenarios runs using EC-Earth boundaries currently being made in IDL.