



Med-CORDEX: a first coordinated inter-comparison of fully-coupled regional climate system models (RCSM) for the Mediterranean

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According to several works presented in literature, the Mediterranean region is supposed to be one of the hot-spot for climate change impact. For its geographical position the Mediterranean region is one of the area where land-ocean-atmospheric feedbacks are crucial to be able to understand the past mean climate and variability and to be able to simulate the future evolution of the fully coupled climate system. For all these reasons it is one of the CORDEX sub-domain (MED) leading to the Med-CORDEX group and scientific community.

This is an open and voluntary initiative, financially supported by MISTRALS/HyMeX, and has been initiated by the Mediterranean climate modelling research community as a follow-up of previous initiatives.

In addition to the CORDEX-like simulations (Atmosphere-RCM, 50 km, ERA-Interim and GCM driven runs), Med-CORDEX includes additional simulations dedicated to the use of (1) very high-resolution Regional Climate Models (RCM, up to 10 km) and (2) fully coupled Regional Climate System Models (RCSM), coupling the various components of the regional climate (atmosphere, land surface and hydrology, river and ocean).

Today, Med-CORDEX gathers 23 different modelling groups from 9 different countries (France, Italy, Spain, Serbia, Turkey, Greece, Tunisia, Germany, Hungary) in Europe, Middle-East and North-Africa. They use 12 different atmosphere RCMs including land-surface representation, 4 river models, 10 regional ocean models and 12 different Regional Climate System Models. More than half of the runs are archived and freely available for non-commercial use through a dedicated database hosted at ENEA at www.medcordex.eu in common and standardized netcdf format (265,000 files and 3.6 Tb uploaded). This includes atmosphere-only, ocean-only and fully coupled regional climate models. In particular multi-model regional ocean simulations have been archived in a common and standardized format for the first time in the history of the Mediterranean Sea modelling allowing their access for a large range of users.

Med-CORDEX is ready to take part to the phase 2 of the CORDEX experiments and it has defined its new core simulations and 4 more specific mini challenges that will be possibly finalized in 4 CORDEX FPS.

Since 2011, 31 articles have been published using Med-CORDEX simulations (<http://www.medcordex.eu/publications.php>) and a Climate Dynamic special issue is going to be published in 2016, entirely dedicated to the Med-CORDEX results.