



## **Med-CORDEX: a first coordinated inter-comparison of high-resolution and fully coupled regional climate models for the Mediterranean**

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Due to its geographical, meteorological and oceanographic features, the Mediterranean region can be considered as one of the best place to test and use regional climate modelling tools. It has been chosen as one of the CORDEX sub-domain (MED) leading to the Med-CORDEX initiative. This open and voluntary initiative, financially supported by MISTRALS/HyMeX, has been proposed 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 to experiment some of the regional climate modelling current challenges. We present here the status and results of these 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. Almost all the simulations planned (Evaluation, Historical and Scenarios modes) have been completed by the modelling teams. 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](http://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 In particular multi-model regional ocean simulations have been archived in a common and standardized format for the first time in the history of the Mediterranean Sea modelling allowing their access for a large range of users. Since 2011, 31 articles have been published using Med-CORDEX simulations (<http://www.medcordex.eu/publications.php>).