

MEDITERRANEAN CLIMATE VARIABILITY AND PREDICTABILITY (MEDCLIVAR): AN ESF NETWORKING PROGRAMME

Roberta Boscolo¹ and Piero Lionello² *

¹ CLIVAR International Project Office, Spain

² University of Lecce, Italy - piero.lionello@unile.it

Abstract

MedCLIVAR is an international programme which aims at coordinating and promoting the study of the Mediterranean climate. MedCLIVAR's scientific priorities are: description of climate past evolution, assessment of climate variability, understanding the mechanisms responsible for it, identifying trends and providing climate prediction in relation to future emission scenarios.

Keywords : Global Change, Models, Circulation, Air-sea Interactions, Paleoceanography.

The Mediterranean climate is characterized by the Mediterranean Sea, which represents a relatively large mass of water, and its peculiar geographical location: at mid latitude, on the west side of a large continental area, surrounded by three continents with high mountains ridges, and with a restricted exchange with the Atlantic ocean. In general the climate exhibits hot and dry summers, and mild and rainy winter seasons. However, within such a small spatial scale there are large climate contrasts as the area includes Alpin regions in the north, with permanent glaciers and relatively high precipitation rates, and subtropical semiarid regions in the south where the extended Atlas mountains ridge also play a major role. Moreover the Mediterranean is a transition zone between midlatitude climate regimes, located at the border of the midlatitude storm track, and the tropical climate, located under the descending branch of the Hadley cell [1].

involved in regional climate studies; providing a source of information to assist governments and local authorities in decision-making; and providing material and documentation to the public to inform them on climate issues. The ESF MedCLIVAR will pursue these goals through:

- Annual workshops

- Summer schools

- Exchange grants, to offer MedCLIVAR scientists the opportunity to spend up to 5 months in a host institution to exchange information, share data and develop common work on the Mediterranean climate.

For the latest information on this Research Networking Programme, consult the MedCLIVAR websites: www.esf.org/medclivar and www.medclivar.eu

References

1 - Lionello P., Malanotte-Rizzoli P. and Boscolo R. (eds), 2006. Mediterranean Climate Variability. Elsevier, 421pp

2 - Mariotti A., Struglia M.V., Zeng N. and Lau K.-M., 2002. The hydrological cycle in the Mediterranean region and implication for the water budget in the Mediterranean Sea. *J. Climate*, 15: 1674-1690

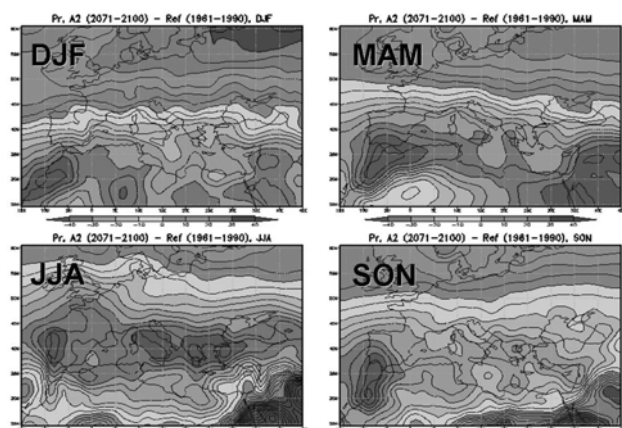


Fig. 1. Multi Global Model Ensemble average change in precipitation for the four seasons, 2071-2100 minus 1961-1990, A2 scenario. Units are % of 1961-1990 value. DJF is December-January-February, MAM is March-April-May, JJA is June-July-August, SON is September-October-November (Courtesy of F.Giorgi)

These characteristics make the Mediterranean region potentially very sensitive to climate change. Indeed, simulations of future climate scenarios tend to agree that a higher emission level could produce a temperature increase larger than the global average value, further reduce summer precipitations and increase the interannual variability of both temperature and precipitation. Progress in understanding of the Mediterranean climate has important environmental, societal and economical implications. The Mediterranean region is characterized by large cultural, economical, political, demographic gradients in a situation already under environmental stress (heat waves, highly variable precipitation, limited water resources, drought, floods), where lack of readiness and adequate adaptation strategies could result in critical situations, in particular in connection with the occurrence of extremes and inadequate evaluation of climate change impacts [2].

The European Science Foundation MedCLIVAR Programme aims at assisting scientists in developing coordinated research projects; favouring the exchange of information and expertise; establishing a network of European, Middle-East and North African institutes and scientists actively