



Potential sources of seasonal climate predictability in the Mediterranean Basin

J. Ballester (1), X. Rodó (1), B. Cash (1,2)

(1) Climate Research Laboratory, Spain, (2) Center for Ocean-Land-Atmosphere Studies, USA
(jballester@pcb.ub.es / Phone: +34934034524)

Current seasonal climate predictions for the Mediterranean basin derived from statistical and dynamical models show a very low skill and limited application. The absence of an accurate and exhaustive diagnosis describing all possible sources of predictability seems to also add to that limitation. As an example, although the ENSO influence over the Mediterranean region has been already described, the impact that other oceanic regions of the planet might also have are far to be fully determined.

The present work aims to explore tropical ocean regions in the search of useful sources of seasonal predictability for the Mediterranean Basin. The Extended Reconstructed global Sea Surface Temperature dataset (NOAA NCDC ERRSST v2) was used for the 1951-2000 time interval in order to describe the ocean structures yielding the required ocean memory. The study was complemented by the use of the NCEP/NCAR reanalysis searching for dynamical atmospheric patterns associated to the former teleconnections.

According to the results, not only the Tropical Pacific leads to predictable Mediterranean anomalies, but the same applies for specific regions in the Tropical Atlantic. Coherent atmospheric patterns in response can be found, although characteristic time of the atmosphere is smaller. We compare the resulting projections with those arising from simulations using a high-resolution AGCM-only model with prescribed-only conditions in the eastern tropical Pacific region. Results show how at large the prescribed AGCM successfully reproduces main observed patterns in the Tropics, though extratropical responses are largely underestimated and the large dipole anomaly forming at high latitudes is not reproduced.