Plinius Conference Abstracts
Vol. 12, Plinius12-100
12th Plinius Conference on Mediterranean Storms
Corfu Island Greece, September 2010

Precipitation trends within the Mediterranean region

C. M. Philandras (1), P. T. Nastos (2), K. C. Douvis (1), G. B. Tselioudis (1), C. S. Zerefos (1,2)

(1) Research Center of Atmospheric Physics and Climatology, Academy of Athens (phatmcli@otenet.gr), (2) Laboratory of Climatology & Atmospheric Environment, Faculty of Geology & Geoenvironment, University of Athens (nastos@geol.uoa.gr)

In this study, the precipitation trends for two periods, one concerning the twentieth century (1901-2002) and the other the second half of this century (1951-2002), within the Mediterranean region, were analyzed using the gridded data CRU S 2.1 (Climatic Research Unit). These data were compared to stations' observations, while the influence of the North Atlantic Oscillation (NAO) in the Mediterranean precipitation totals was examined. In the process, the climatic changes in the precipitation between the period 1961-1990 (reference period) and the period 2071-2100 (future climate) were studied using climate model simulations, based on the A1B SRES scenario.

The results of the analysis showed that, decreasing trends (statistically significant at 95% CL) of the annual precipitation time series, form surface meteorological stations and CRU S 2.1 grid points, within the majority of the Mediterranean region, appeared during the twentieth century. These trends are more pronounced during the period 1951-2002. Concerning the impact of atmospheric circulation, the precipitation totals during the rainy season (October-April) were found to be correlated with NAO index (statistically significant correlation at 95% CL).

According to KNMI regional climate model and for A1B SRES scenario, the projected annual precipitation will decrease, concerning the period 1971-2100 related to the reference period 1961-1990.