Geophysical Research Abstracts, Vol. 8, 00692, 2006
SRef-ID: 1607-7962/gra/EGU06-A-00692


# El Niño and La Niña influence on droughts at different time scales in the Iberian Peninsula

**S.M. Vicente-Serrano**

Instituto Pirenaico de Ecología, Spain (svicen@ipe.csic.es/Phone: +34976716034)

The impact of extreme phases of the Southern Oscillation (SO: El Niño/La Niña) on droughts in the Iberian Peninsula have been analysed. For this purpose, 51 precipitation series (1910 to 2000) were used. A spatial classification based on monthly precipitation records was made to identify homogeneous regions and to analyse any spatial differences in the influence of these extreme phases. For each region, a drought index was calculated (Standardized Precipitation Index) at time scales of 1, 3, 6 and 12 months. El Niño and La Niña years were identified using the Southern Oscillation Index (SOI). Mean values of the drought index were calculated each month for the four time scales during El Niño and La Niña years, as well as for the year following these events. The statistical significance of any anomalies was evaluated by means of the non-parametric Wilcoxon Mann-Whitney test. The results indicate that extreme phases of the SO significantly affect the occurrence of droughts in the Iberian Peninsula. Moreover, spatial and temporal differences, depending on the time scale used, were identified. Large areas of the Iberian Peninsula are affected by significant negative values of SPI during the final months of La Niña years and the initial months of the following year. By contrast, other areas are affected by dry conditions during the first months of El Niño years as well as during the summers and autumns of the following year. The spatial differences in drought conditions during extreme phases of the SO are noticeable and the drought signal is more consistent for La Niña than it is for El Niño years.