Geophysical Research Abstracts, Vol. 9, 09317, 2007
SRef-ID:

A comparative performance analysis of three meteorological drought indices for Thessaly, Greece

A. Marinaki, M. Spiliotopoulos and **H. Michalopoulou**

Department of Applied Physics, Lab.of Meteorology, University of Athens, Greece, (hmihalop@phys.uoa.gr)

The potential of drought indices in assessing drought phenomena is examined for Thessaly region, Greece. Thessaly is located at the centre part of Greece and has the highest percentage of flatland than any other district in Greece. Thessaly is a fertile country and, among other things, a major supplier of agricultural products. At the western side of Thessaly the climate is continental that is the winters are cold and the summers hot and the temperature difference between the two seasons is large, while, at the eastern side of Thessaly the climate is warm Mediterranean. These phenomena affect very notably the agricultural activities at this region and this is the main reason for selecting Thessaly for this study. Specifically, three indices have been tested and compared in order to estimate possible drought phenomena. These indices are Palmer Drought Severity Index - PDSI, 1965, Bhalme and Mooley Drought Index - BMDI, 1980 and Byun and Wilhite - Standardized Effective Precipitation - SEP, 1999. For the assessing of drought periods temperature and rainfall data have been utilized from three meteorological stations of Thessaly (namely Larisa, Trikala and Aghialos). Thus, the potential of monitoring the drought/flood conditions is examined. After the statistical processing of the data sets it seems that all of the three indices are found to be efficient enough to estimate drought phenomena. The final scope of this study is to find the possible advantages or disadvantages of these indices in order to investigate which is the more suitable drought index, according to each specific application, for this region of Greece.