EMS Annual Meeting Abstracts,
Vol. 6, EMS2009-194-1, 2009
9th EMS / 9th ECAM

9th EMS Annual Meeting
9th European Conference on Applications of Meteorology
High resolution meteorology
- applications and services

Climate Change Case Study for Hungary using Soil Moisture Data

Z. Dunkel and Sz. Bella

OMSZ - Hungarian Meteorological Service, Budapest, Hungary (dunkel.z@met.hu, bella.sz@met.hu)

The results of soil moisture data calculation were analysed to assess the degree of its spatial and temporal variation in Hungary. As the first step of the investigation the data of 1881-1990 periods was examined. Later the survey will extended for the 1991-2008 period as well as. Long homogeneous series of monthly data of precipitation, temperature and water vapour pressure going back to 1881 were used for the calculation of soil moisture of upper one-meter-layer for 16 stations. The results of calculation were compared with in situ measured soils moisture values and for the examined years a good correlation was found. The goal of the investigation was to detect any kind of systematic change in the soil moisture data series. The growing tendency of low soil moisture content as a disadvantageous signal of climate change could be accepted. Three statistical methods were used to identify any systematic change. But the statistical analysis showed that the presence of low soil moisture content in the end of summer or dry summer is not an abnormal situation on the Great Hungarian Plain no significant growing or decreasing tendency of dry periods has been found until the end of 1990.