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Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

Monitoring the summer drought variability over the Iberian Peninsula and its relationship to global sea surface temperature and large scale atmospheric circulation

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Summer drought variability over Iberian Peninsula (IP) is investigated using two monthly global datasets, the self calibrated Palmer drought severity index (scPDSI) and the newly developed Standardized Precipitation-Evapotranspiration Index (SPEI). Both datasets have a spatial resolution of 0.5º and provides temporal coverage for the period 1901-2002 and 1901-2006, respectively. Comparison between spatially averaged scPDSI and SPEI over the IP grid points at time scales of 3, 6, 9, 12, 18 and 24 months is made in terms of temporal evolution, frequency distribution and correlation coefficients. The summer variability of the scPDSI and 24-month SPEI are compared in terms of explained variance, patterns of variability and temporal evolution of the time series of PC coefficients of the first three principal modes. A Canonical Correlation Analysis between summer 24-month SPEI over IP and global Sea Surface Temperature (SST) points out on the existence of coupled IP summer drought patterns and global SST anomalies. The composite maps for the summer 24-month SPEI and winter global SST and winter sea level pressure (SLP) for the driest years shows that the IP summer drought is related to winter large scale field anomalies.