



Summer moisture variability across Europe, 1901-2002: an analysis based on the self-calibrating Palmer Drought Severity Index

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Maps of monthly self-calibrating Palmer Drought Severity Index (scPDSI) have been calculated for the period 1901-2002 for Europe (35°N-70°N and 10°W-60°E) with a spatial resolution of $0.5^\circ \times 0.5^\circ$. The scPDSI is a recently introduced convenient measure to describe spatial and temporal variability of moisture availability and is based on the more common Palmer Drought Severity Index. The scPDSI, however, improves upon the Palmer Drought Severity Index by having a consistent behaviour of the index over diverse climatological regions. This makes spatial comparisons of scPDSI values on continental scales meaningful.

The mid-1940s to early 1950s stand out as a persistent and exceptionally dry period, whereas the mid-1910s and late 1970s to early 1980s were very wet. The driest and wettest summers on record, averaged over Europe, were 1947 and 1915 respectively, while the years 1921 and 1981 had over 11% and over 7% of Europe suffering from extreme drought or wet conditions respectively. Trends in summer moisture availability over Europe for the 1901-2002 period fail to be statistical significant.