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Assessment of wet/dry conditions in Iberia using WASP-Index

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This paper is focused on analysing the temporal and spatial variability of droughts in Iberia and five regions, for the period 1951-2007, for four observational precipitation gridded datasets, namely, GPCC, CRU, ECA and a high resolution $(0.2^{\circ} \times 0.2^{\circ})$ dataset. Droughts are assessed using the Weighted Anomaly of Standardized Precipitation (WASP) Index for 3-, 6- and 12-month time-scales. The results show that WASP-Index and the widely used Standardized Precipitation Index (SPI) are highly correlated for the three time-scales.

The performance of lower resolution precipitation datasets, when they are applied to drought detection, is also discussed. The longest and most intensive droughts are recorded in 1953-54, 1957-58, 1965, 1981-82, 1992-93, 1995, 1999-2000 and 2005-06. These major drought spells are captured by the four datasets. Furthermore, an increase in the severity and droughts frequency from the late 1980's is also found. Finally, in western region of the Iberian Peninsula, statistically significant drying trends are detected for all time-scales. In eastern parts of Iberia, larger uncertainties are found on the trends signal.

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