High-spatial resolution probability maps of drought duration and magnitude across Spain

Fernando Domínguez-Castro¹, Sergio M. Vicente-Serrano¹, Miquel Tomás-Burguera², Marina Peña-Gallardo¹, Santiago Beguería², Ahmed El Kenawy¹,³, Yolanda Luna³, Ana Morata⁴

¹Instituto Pirenaico de Ecología, Spanish National Research Council (IPE-CSIC), Zaragoza, 50059, Spain
²Estación Experimental de Aula Dei, Spanish National Research Council (EEAD-CSIC), Zaragoza, 50059, Spain
³Department of Geography, Mansoura University, Mansoura, 35516, Egypt
⁴Agencia Estatal de Meteorología (AEMET), Madrid, 28071, Spain

Correspondence to: Fernando Domínguez-Castro (f.dominguez.castro@gmail.com)
Supplementary Figure 1: L-moment diagrams for the peak-over-threshold series obtained from the 3-month SPEI duration series
Supplementary Figure 2: L-moment diagrams for the peak-over-threshold series obtained from the 6-month SPEI duration series
Supplementary Figure 3: L-moment diagrams for the peak-over-threshold series obtained from the 12-month SPEI duration series
Supplementary Figure 4: L-moment diagrams for the peak-over-threshold series obtained from the 1-month SPEI magnitude series
Supplementary Figure 5: L-moment diagrams for the peak-over-threshold series obtained from the 3-month SPEI magnitude series
Supplementary Figure 6: L-moment diagrams for the peak-over-threshold series obtained from the 6-month SPEI magnitude series
Supplementary Figure 7: L-moment diagrams for the peak-over-threshold series obtained from the 1-month SPI duration series
Supplementary Figure 8: L-moment diagrams for the peak-over-threshold series obtained from the 3-month SPI duration series
Supplementary Figure 9: L-moment diagrams for the peak-over-threshold series obtained from the 6-month SPI duration series
Supplementary Figure 10: L-moment diagrams for the peak-over-threshold series obtained from the 12-month SPI duration series
Supplementary Figure 11: L-moment diagrams for the peak-over-threshold series obtained from the 1-month SPI magnitude series
Supplementary Figure 12: L-moment diagrams for the peak-over-threshold series obtained from the 3-month SPI magnitude series
Supplementary Figure 13: L-moment diagrams for the peak-over-threshold series obtained from the 6-month SPI magnitude series.
Supplementary Figure 14: L-moment diagrams for the peak-over-threshold series obtained from the 12-month SPI magnitude series
Supplementary Figure 15: Spatial distribution of the parameters of the GP distribution for the SPI magnitude series
Supplementary Figure 16: Spatial distribution of the parameters of the GP distribution for the SPEI magnitude series
Supplementary Figure 17: Spatial distribution of the maximum drought magnitude (in SPEI units) from the 1-, 3-, 6- and 12-month SPEI series in a period of 50 and 100 years.
Supplementary Figure 18: Spatial distribution of the maximum drought magnitude (in SPI units) from the 1-, 3-, 6- and 12-month SPI series in a period of 50 and 100 years.
Supplementary Figure 19: Scatterplots showing the relationship between the maximum drought duration (in weeks) expected in a period of 50 and 100 years considering 1-, 3-, 6- and 12- SPEI and the SPI. Colors represent the density of points, with red denoting the highest density. Given the large sample used, the significance of the Pearson’s r coefficients was estimated by means of a Montecarlo approach using $10^3$ random samples, with each sample containing 30 cases.