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Wildfire activity in the Iberian Peninsula

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The main objective of this work is to characterize the spatial and temporal variability of the monthly wildfire activity in the Iberian Peninsula trough the first comprehensive assessment of wildfires from both countries (Portugal and Spain). This was made possible for the 28-year long period spanning between 1980 and 2007 using and comparing the Portuguese and Spanish fire databases. We use the Portuguese wildfire database kindly provided by the Forest National Authority which includes information of the fire events recorded between the 1980-2007 period and compute time series of monthly values of burnt area that will be used and the correspondent values from the Spanish database. It should be stressed that the Iberian Peninsula is characterized by very different wildfire regimes. The majority of Iberia being dominated by an intense seasonal peak in the summer, particularly the western (Portugal) and southern (Andalucía) areas. However, the greener provinces in the north present a strong secondary peak in late winter (Galicia) or even a higher activity during the months of February-March (Asturias).

Furthermore, we also aim to characterize the weather conditions and the atmospheric circulation associated with high wildfire activity over different areas of the Iberian Peninsula. For this purpose a set of large-scale atmospheric fields was retrieved from the NCEP/NCAR reanalysis. Results obtained for the description of the individual and joint spatial and temporal analysis were based on different methodology, including multivariate statistical analysis (PCA, cluster analysis) and regression techniques, as well as the weather conditions and synoptic patterns characteristic of the months with higher values of burnt area.