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Multivariate statistical analysis of wildfires in Portugal

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Several studies demonstrate that wildfires in Portugal present high temporal and spatial variability as well as cluster behavior (Pereira et al., 2005, 2011). This study aims to contribute to the characterization of the fire regime in Portugal with the multivariate statistical analysis of the time series of number of fires and area burned in Portugal during the 1980 – 2009 period. The data used in the analysis is an extended version of the Rural Fire Portuguese Database (PRFD) (Pereira et al, 2011), provided by the National Forest Authority (Autoridade Florestal Nacional, AFN), the Portuguese Forest Service, which includes information for more than 500,000 [U+FB01]re records. There are many multiple advanced techniques for examining the relationships among multiple time series at the same time (e.g., canonical correlation analysis, principal components analysis, factor analysis, path analysis, multiple analyses of variance, clustering systems). This study compares and discusses the results obtained with these different techniques.

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