



## Continental Portuguese Rural Fire Database: completeness and round effects

Mário Pereira (1,2), Bruce Malamud (3), and Ricardo Trigo (4)

(1) Centro de Investigação e de Tecnologias Agro-Ambientais e Biológicas (CITAB), Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal (gpereira@utad.pt / 00351 259350480), (2) Departamento de Física, Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal (gpereira@utad.pt / 00351 259350480), (3) Department of Geography, King's College London, London, UK (bruce.malamud@kcl.ac.uk), (4) Centro de Geofísica da Universidade de Lisboa, IDL, Universidade de Lisboa, Lisboa, Portugal (rmtrigo@fc.ul.pt / 00351 217500977)

In this work we examine the Continental Portugal Rural Fire Database, with respect to its completeness, temporal evolution of burnt areas, and rounding of burnt area sizes in the database. This dataset is one of the largest datasets in Europe with almost 500,000 fire records registered during the 1980-2007 period. Detailed information about each fire event was collected in situ by the firemen and compiled by the Forest National Authority. The Portuguese fire database includes information about the location, date and time of the occurrence, type of fire, and amount of burnt area in forests, shrublands and agricultural areas. After correcting a small number (<2.7%) of data inconsistencies (missing values, format errors and date/time errors) we examine the completeness of the dataset, the temporal evolution of the number of fire records and burnt area by fires with area below, between and above given thresholds, and the tendency for raw data (as reported in the database) to be rounded as a function of burnt area. We find that the minimum measured burnt areas in this database have changed over time: AF(min) = 0.1 ha (1980–1990), AF(min) = 0.01 ha (1991–1992), and AF(min) = 0.0001 ha (1992–2005), with varying degrees of completeness down to these values. These changes in minimum area measured are responsible for a decreasing trend in the percentage of the annual number of fires with area  $\geq$  AF(threshold). The proportion of annual area burnt per year, by fires with area below, between or above given thresholds, show a similar inter-annual variability compared to the total burnt area per year time series. Finally, we find a noticeable rounding effect in the original ‘raw’ data at specific burned area values, with ‘peak’ occurrences increasing logarithmically.