



Extreme Meteorological Events from documentary sources on old Aragon Kingdom, AD1000-1500. Firsts results after a systematic approach to data availability

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Research on documentary sources focused on detection and reconstruction of climatic data and extreme meteorological events is an activity with notable tradition on palaeoclimatic discipline. Historical climatology offers a good source of climatic and environmental proxy-data. This information covers past centuries establishing good overlapping with instrumental data availability period. Best qualities of historical information are a high temporal resolution, an exact and reliable datation, and complementary information related to environmental and human impacts.

Historical climatology offers a large number of data chronologies for Europe covering historiographical periods from Low Middle Age to Contemporary Age (14th to 20th Centuries). Into framework of EU IP Millennium, a systematic research assumed the challenge to collect data from High Middle Age. Documentary sources are discontinuous and scattered, information is not precise and reliable, but all possible original information can be useful to characterize the Warm Medieval Period, most recent climatic period similar to possible climate of next future, at least concerning thermic conditions.

Present work shows a systematic effort on documentary sources of Old Aragon Kingdom (actually, spanish regions of Catalonia, Aragon, Valentia and Balearic Islands), collecting extreme weather events for period AD1000-1500. Historical context of Aragon Kingdom was no easy in this period, focused on recovering territory in front of Muslim Kingdoms (Reconquista) up to 13th Century from North to South. After this, consolidation of modern institutions and urban network took 14-15th Centuries.

Data sources has been all medieval chronicles of kingdom institution, early urban chronicles and scattered informations collected by previous historians on bibliographical sources.

Firsts results show 512 informations, 15 of them previous to AD1000. Most of data are related to hydrometeorological anomalies: 150 flood events, 101 drought events and 82 storms or sea storms. Other 86 informations concern famines and shortages, events related to unidentified environmental anomalies. Thermic information obtained is divided on 46 events of cold weather or severe snowfall and 5 events related to extreme warm conditions. Finally, 27 data are related to strong wind events.

Temporal patterns detected follow general characteristics already known for early Little Ice Age: rainfall anomalies (floods and droughts) increase clearly their frequency during the firsts decades of 14th Century. Other oscillation of strong rainfall variability appear during the second half of 15th Century. It results interesting the low frequency of extreme events during the centuries 11 to 13th.