

Historical aspects of longest temperature data series of Spain: Barcelona, 1780-2010

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Meteorological instrumental observation was a scientific activity developed by different professionals and institutions before creation of Meteorological Services of modern states. Present situation of global change and social sensitivity for climate justifies a new interest for data collection focused on reconstruction of long temporal series. Results are used for analysis of climatic variability and climatic modelling. But also climatic and meteorological anomalous events can be showed.

This work wants show historical context of early meteorological observation on Western Europe, professionals and institutions involved on that. In the case of Barcelona, most of persons involved on this activity were doctors, with clear objective to have in hand environmental information to put in relation with public health. Cities with increasing industrialization experienced strong problems and doctors took decision to record environmental variables with the aim to know more about processes producing health impact on population. Barcelona had this historical process centred on Dr. Francesc Salvà. After a learning period in France, obtaining Ph.D. on Toulouse University, Salvà started on January 1780 three daily meteorological records on his domestic observatory following criteria and procedures of "Royale Société de Medicine de Paris". This work generated a first series between 1780 and 1825. Salvà also had a docent activity and next generations of doctors had a similar environmental sensitivity. During 19th Century meteorological record was continued, connecting with firsts official observation on University of Barcelona (1855-1865).

During 20th Century official observation is available, but clear problems of urban heat island make unessential the data generated on Barcelona. Spanish Meteorological Office moved the official observatory to Barcelona Airport (18 km. far of the city) during the 1990s. Then, to have continuity into the city, is needed the access to data of private observers. Fortunately, a private scientific institution put in service an astronomical observatory in the hills close of Barcelona: Science Academy of Barcelona built Fabra Observatory in the first decade of 20th Century only 6km. far of city downtown. Meteorological data generated can produce a new data free of urban effects, but also is useful to produce an overlapping respect to official and private observers.

Barcelona has a long meteorological history, but data produced by different persons and institutions, make necessary an historical work to detect documentary sources containing records. Data collection is not easy because of different instruments, methods of observation, documentary configuration of information, and other technical aspects. Dispersion of sources produced by social conflicts also contributed to difficult reconstruction of daily records. Civil War (1936-1939) produced for example a strong dispersion of documents out of Catalonia during several decades.

A few years ago already exists possibility to construct complete daily series for Barcelona "crossing" four centuries. After an historical work, these data can help again to know more about climatic variability and meteorological events.