Geophysical Research Abstracts, Vol. 9, 03085, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-03085

A new temperature, pressure and wind series for Cádiz (Southern Spain) 1806-1852.

D. Gallego (1), R. García-Herrera (2), P. Ribera (1), C. Peña (1) and N. Calvo (2)

(1) Departamento de Sistemas Físicos, Químicos y Naturales, Universidad Pablo de Olavide, Seville, Spain, (2) Departamento de Física de la Tierra II, Universidad Complutense, Madrid, Spain (dgalpuy@upo.es)

A new documental data source for wind, atmospheric pressure and air temperature for the city of Cádiz (Southern Spain) has been abstracted and compared with present climate. Cádiz was one of the most important European ports at the beginning of the 19th century and, consequently, several watchtowers were operating in the city to control the maritime traffic. Since 1825, instruments for measuring pressure and temperature were routinely operated in the main Watchtower of Cádiz and the records have been preserved up to the present. While the historical pressure series shows almost identical values to those computed for the period 1971-2000, the temperature at sunset has experimented a clear warming up to 2.7 ºC for the December averages. Most of this strong increase in temperature seems hardly attributable to the urban growing of the city due to the characteristics of Cádiz, with a size limited by the coastline and already urbanized at the beginning of the 19th century. In addition to the instrumental records, wind estimations were taken at sunrise, noon and sunset in a textual form, spanning the period 1806-1852. Wind forces have been transformed in their numerical equivalents and compared with modern values. The results show that the numerical estimation of ancient wind forces, at least in land-based Spanish sources, while providing a strong climatic signal have a strong bias to larger values than their instrumental equivalents. This new finding could affect future climatic reconstructions based on similar historical wind databases which recently have became available to the scientific community.