



LONG-TERM VARIABILITY OF THE ETESIANS THROUGH SHIP'S LOGBOOKS

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Historical wind observations found in old ships' logbooks have been long ago recognized as a valuable source of climatic information. Recently, several studies have employed the wind direction records contained in logbooks to develop reliable climatic indices. In the Mediterranean, and due to its strong dependence on changes in the wind direction, the Etesians regime is an obvious candidate to be characterised by this kind of indices. Moreover, the Mediterranean has been navigated since long ago, and most of the ships traveling to the Eastern Mediterranean took precise wind observations along their route. For this work, a large set of wind direction observations taken aboard ships and currently available in the International Comprehensive Ocean-Atmosphere Data Set database (ICOADS) have been assembled to generate a new instrumental index for the Etesian winds defined as the percentage of days with prevalent northerly wind in the region [20°E- 30°E, 32°N-37°N]. While previous instrumental indices for the Etesians covered only the second half of the 20th Century, our index starts in 1880, allowing the evaluation of the long term trends and the relation to the global climate for a period significantly longer than those found in previous studies. Our results indicate that the Etesian winds are characterised by a secular oscillation, with stronger and more persistent Etesians during the first half of the 20th Century and a significant trend to lower values up to year 2000. From this year on, an apparent recovery to above average values has been detected. In addition, the comparison with analogous Etesian winds indices computed from reanalysis products (NCEP/NCAR 20th Century (V2c) and ERA20C), shows discrepancies among them and with our instrumental reconstruction, which could indicate a misrepresentation of the Etesian winds in the reanalysis products. This research was funded by the Spanish Ministerio de Economía y Competitividad through the project INCITE (CGL2013-44530-P)