



## **Extreme Events and Wave Climate in the Central Mediterranean Sea**

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The statistical analysis on more than 2 decades of wave data, collected on 15 locations in the Central Mediterranean Sea all around the Italian coasts, is here presented. Observations have been taken from the whole archive of the Italian National Wind Wave Measurement Network (RON), run by ISPRA since 1989. This study stems from the necessity of upgrading the last comprehensive report on the observed Italian wave climate, which dates 2002. An effort has been made in order to provide a common level of homogeneity and quality control to the series. The statistics considered are mainly the Joint Frequency Functions of significant wave heights with respect to directions, peak periods and mean periods. Results are shown in the form of two-entries tables and wind roses. In order to determine the relative importance of the historical storms and to estimate the expected values of the wave heights in 50 years period, the Peak Over Threshold method is applied to the sets of independent events, extracted from each series. Even though the series are limited to a 22 years period, the analysis gives valuable information about the spatial distribution of the extreme events of storms on a significant period of time, representing an important clue about the wave climate in the Central Mediterranean Area. The statistics are particularly relevant in order to assess the quality and the reliability of the wave climates obtained by means of numerical simulations on re-analysis of meteorological forecast.