

# Classification of wind climate regimes over the Mediterranean

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A two-stage clustering technique for the classification of mesoscale wind regimes has been recently proposed by Burlando et al. (2006, submitted to *Int. J. Climatol.*). The first stage of the classification scheme is based on a hierarchical cluster analysis, according to the Ward's minimum variance technique applied to an Euclidean distance, for a first-guess subdivision of the events into groups as well as detection and exclusion of outliers. In the second stage, a partitional  $k$ -means clustering for the optimal reassignment of the events among clusters is performed. Following this methodology, synoptic-scale wind fields over the Mediterranean have been analysed in order to check the suitability of this technique to larger scale flows as well as to classify the wind climate regimes of the Mediterranean Basin. The analysis is based on a 30-year long dataset of surface wind speed and direction data from the re-analysis of the European Centre for Medium-range Weather Forecasts (ERA-40). The final classification has been able to identify, for example, the surface circulation patterns corresponding to maestro events in the Western Mediterranean and Meltemi over the Eastern Basin.