



## **Assessment of ENSEMBLES regional climate models for the representation of monthly wind characteristics in the Aegean Sea (Greece): Mean and extremes analysis**

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The main scope of the present study is the assessment of the ability of three of the most updated regional climate models, developed under the frame of the European research project ENSEMBLES (<http://www.ensembles-eu.org/>), to simulate the wind characteristics in the Aegean Sea in Greece. The examined models are KNMI-RACMO<sub>2</sub>, MPI-MREMO, and ICTP – RegCM3. They all have the same spatial resolution (25x25km) and for their future projections they are using the A1B SRES emission scenarios. Their simulated wind data (speed and direction) were compared with observational data from several stations over the domain of study for a time period of 25 years, from 1980 to 2004 on a monthly basis. The primer data were available every three or six hours from which we computed the mean daily wind speed and the prevailing daily wind direction. It should be mentioned, that the comparison was made for the grid point that was the closest to each station over land. Moreover, the extreme speed values were also calculated both for the observational and the simulated data, in order to assess the ability of the models in capturing the most intense wind conditions.

The first results of the study showed that the prevailing winds during the winter and spring months have a north – northeastern or a south – south western direction in most parts of the Aegean sea. The models under examination seem to capture quite satisfactorily this pattern as well as the general characteristics of the winds in this area. During summer, winds in the Aegean Sea have mainly north direction and the models have quite good agreement both in simulating this direction and the wind speed.

Concerning the extreme wind speed (percentiles) it was found that for the stations in the northern Aegean all the models overestimate the extreme wind indices. For the eastern parts of the Aegean the KNMI and the MPI model underestimate the extreme wind speeds while on the other hand the ICTP model overestimates them. Finally for the Cyclades area (central Aegean) all the models underestimate the extremes while in the southern Aegean they overestimate them.

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