



Estimation of the mid-century Etesians wind pattern from EURO-CORDEX models

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The Etesians are one of the major and most prominent wind system, prevailing over the Aegean Sea during summer and early autumn. Here, projections of changes in 30-year (2021-2050) wind speeds relative to 1971-2000, under the 8.5 and 4.5 Representative Concentration Pathways, have been produced for Etesians. Future changes in the number of Etesian days and the associated large scale dynamics are also considered. We analyze seven simulations from three EURO-CORDEX regional climate models at a 12 km grid resolution.

Both scenarios indicate that in most RCMs daily wind speeds are projected to increase by 1-1.5m/s over the Aegean Sea, suggesting that the current estimate of wind power potential for Aegean Sea will be increased with the greenhouse gas forcing in the coming decades (2021-2050). Wind direction at 10-m as well as the number of Etesian days have shown to undergo minor changes. The projected changes in sea level pressure and geopotential height anomalies at 500 hPa have a large spread among the seven simulations with a disperse tendency of strengthening of the ridge over the Balkans.