Figure S1. MAD of the E-OBS daily mean temperature, rain and mean sea-level pressure datasets over the land (left panels) as well as MAD (right panels) of the daily temperature, rain and mean sea-level biases between AdriSC WRF 3-km model results and E-OBS datasets over the land during the 1987-2017 period.
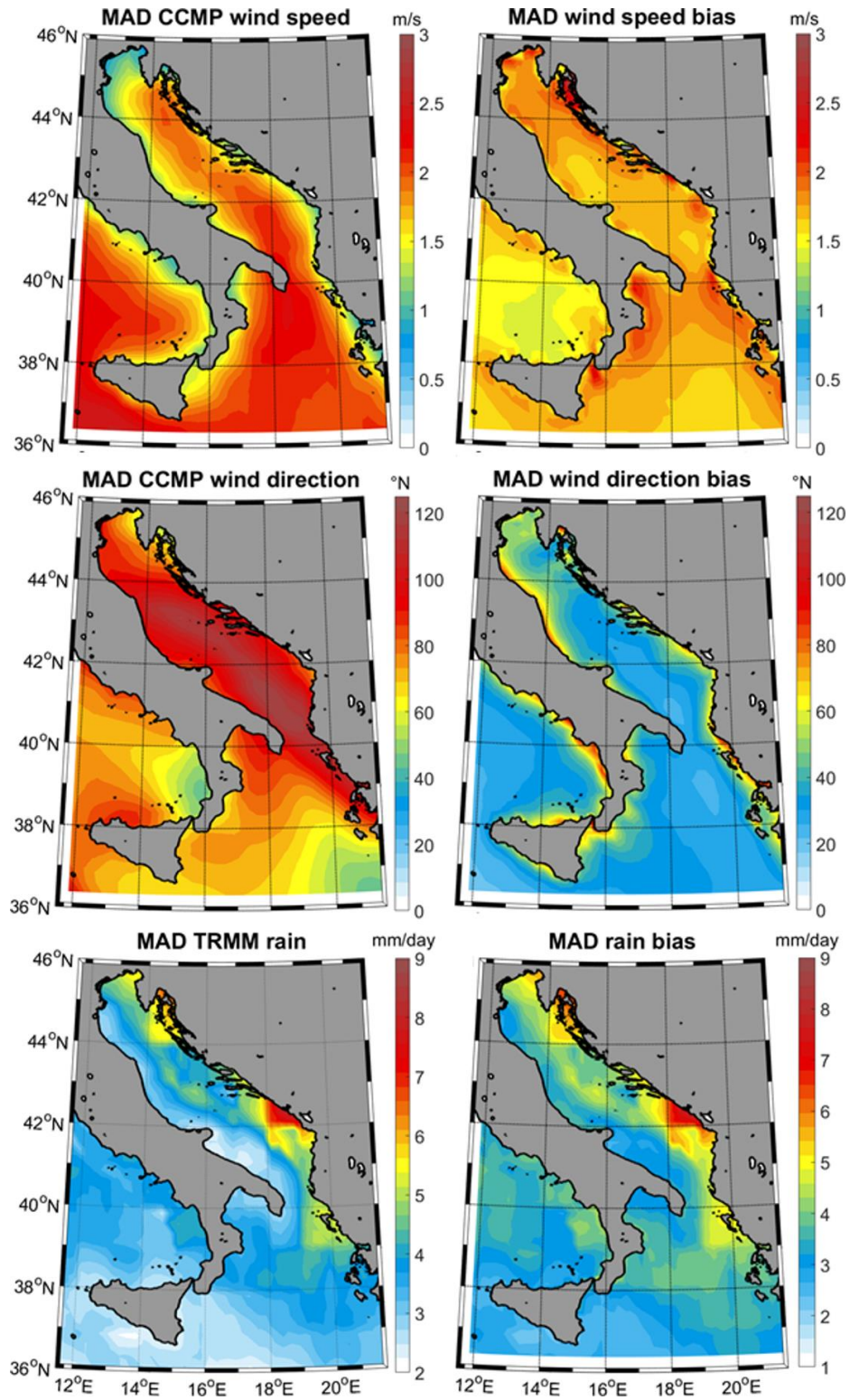
Figure S2. MAD of both the CCMP 6-hourly wind speed and direction and the TRMM daily rain over the sea (left panels) as well as MAD (right panels) of the 6-hourly wind speed and direction and daily rain biases between AdriSC WRF 3-km model results and the CCMP and TRMM datasets over the sea.
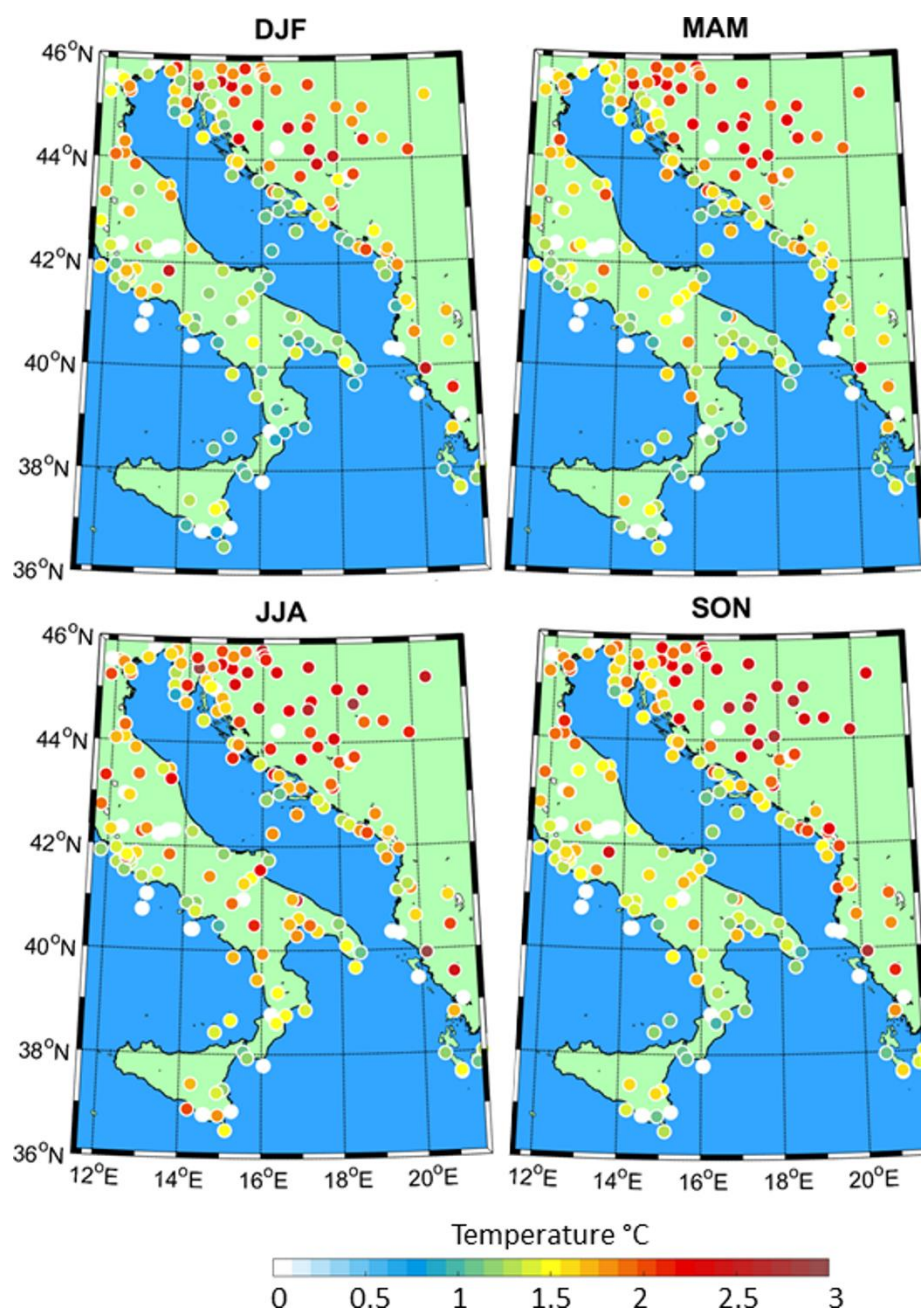
Figure S3. Seasonal variations of the MAD hourly temperature bias between AdriSC WRF 3-km model results and NOAA land station measurements during winter (DJF), spring (MAM), summer (JJA) and autumn (SON) for the 1987-2017 period.
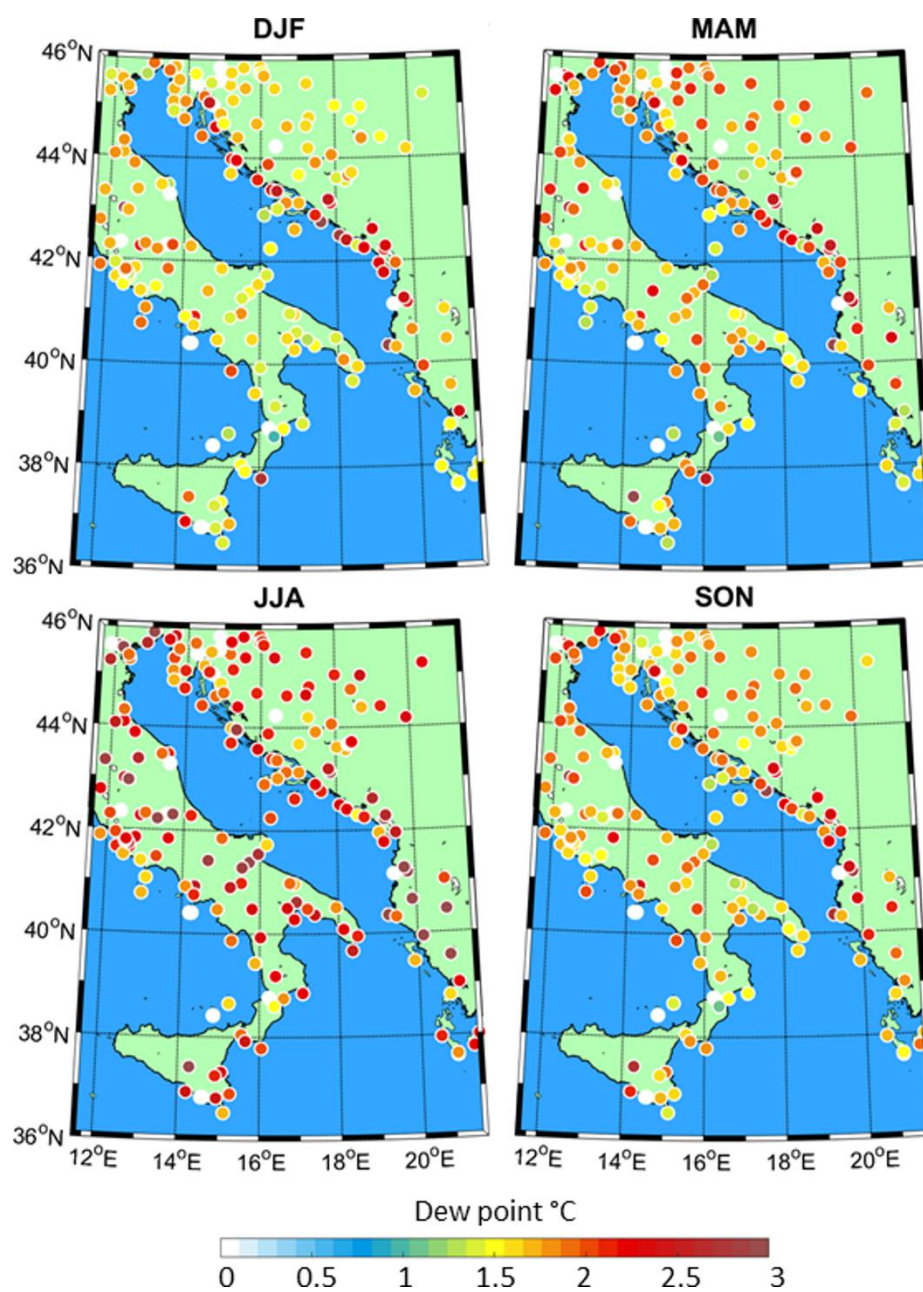
Figure S4. As in Fig. S3 but for the hourly dew point bias.
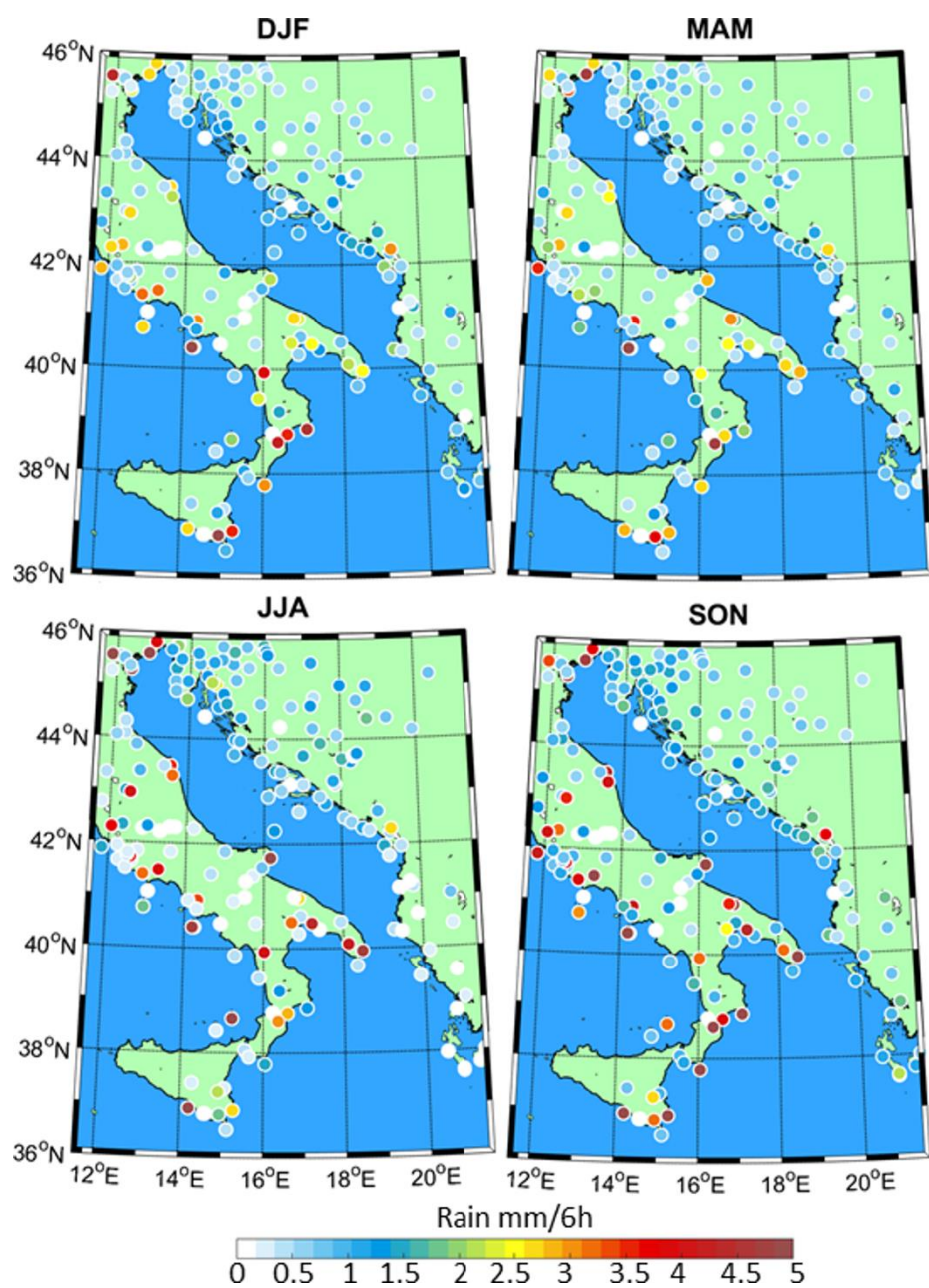
Figure S5. As in Fig. S3 but for the mean 6-hourly rain bias.
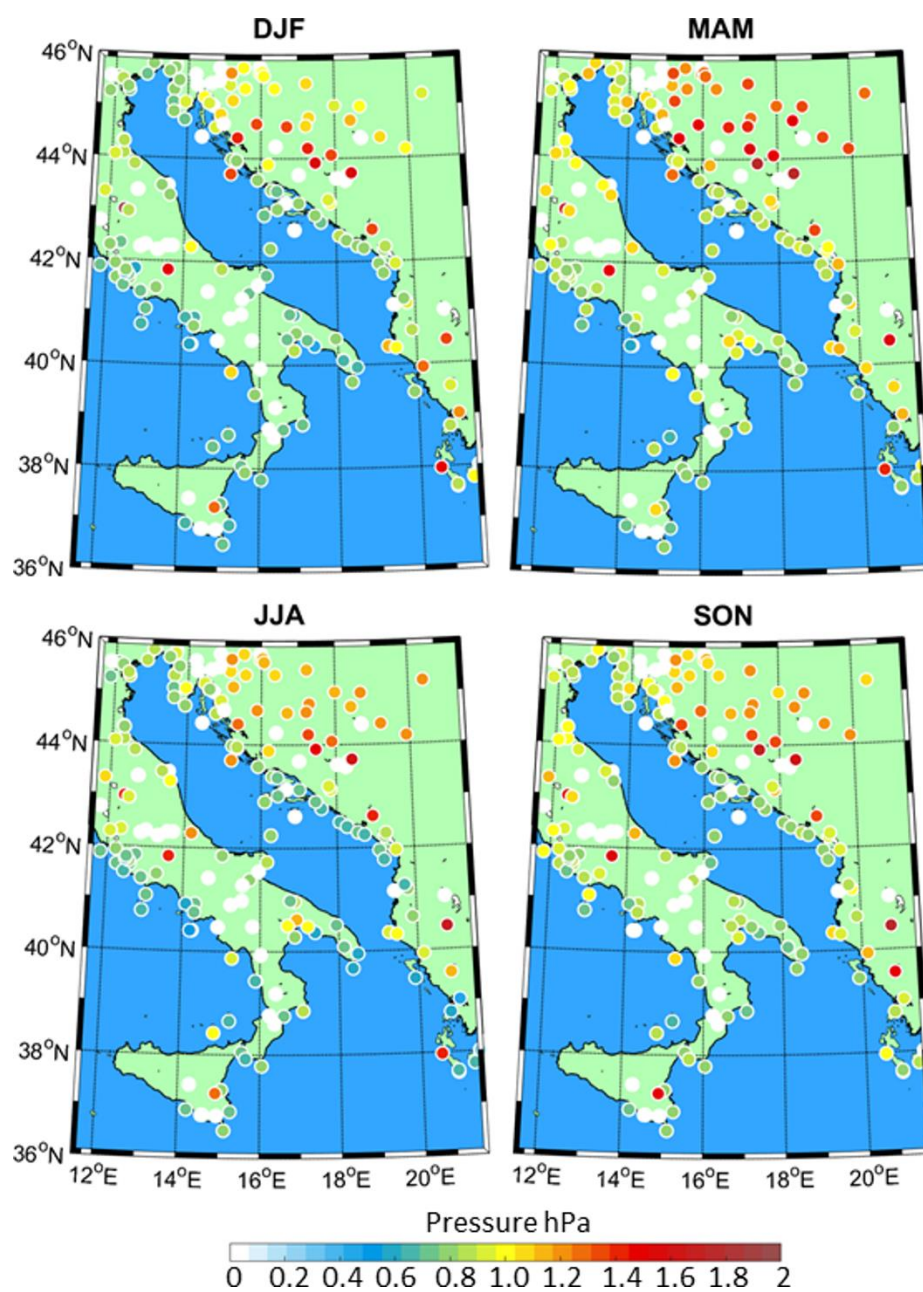
Figure S6. As in Fig. S3 but for the hourly pressure bias.
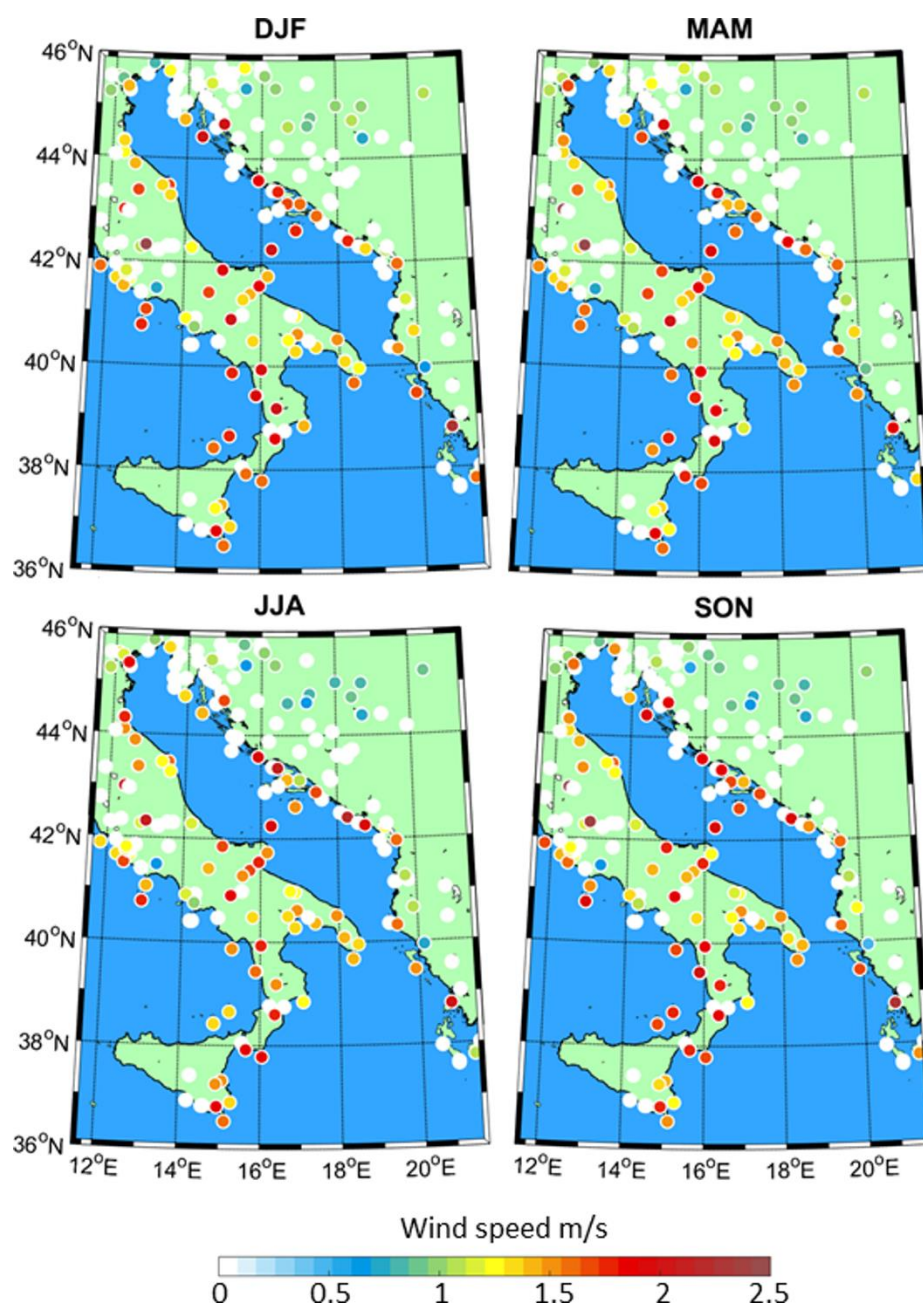
Figure S7. As in Fig. S3 but for the hourly wind speed bias.
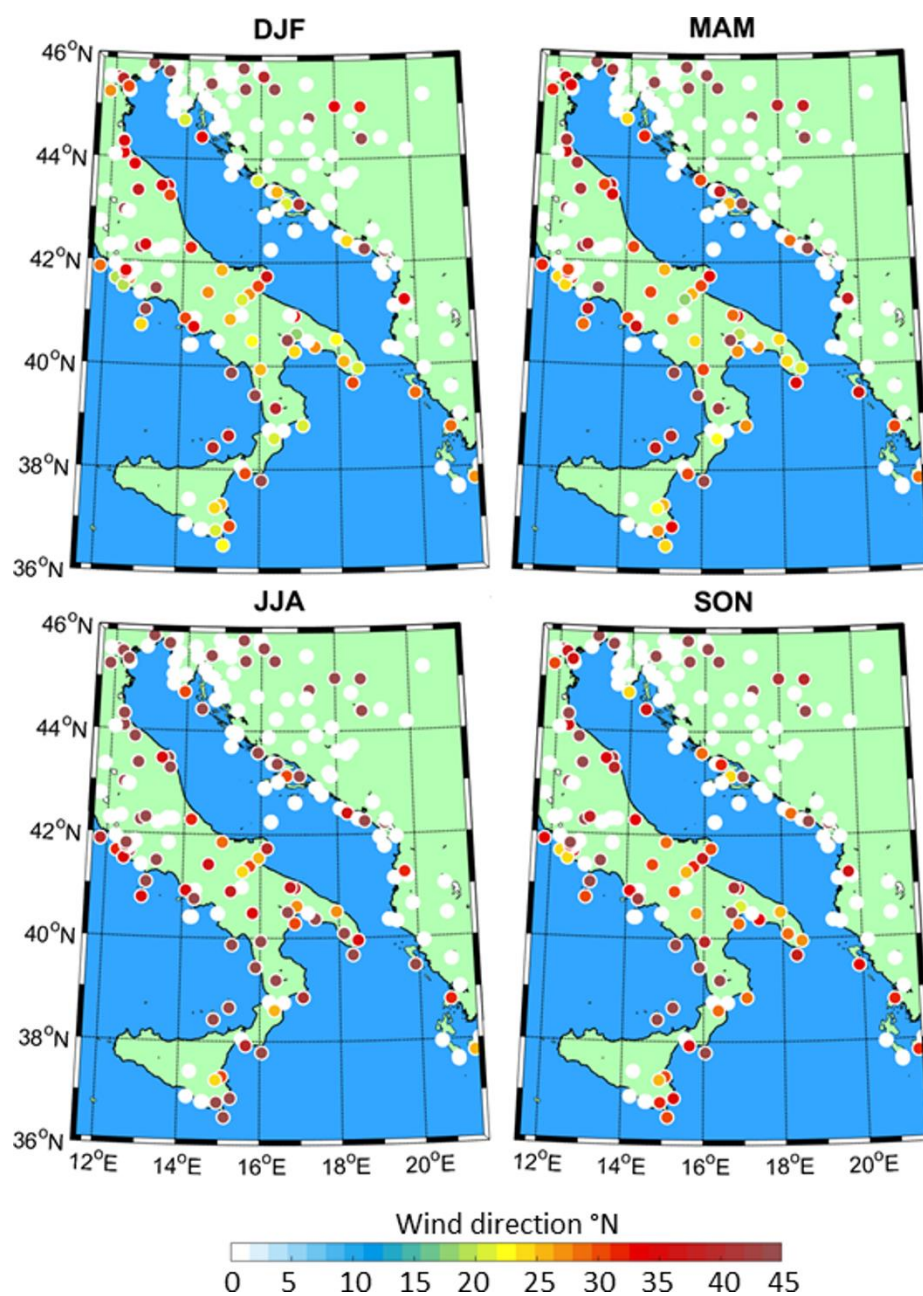
Figure S8. As in Fig. S3 but for the hourly wind direction bias.