



*Supplement of*

## **The impact of the Pacific Decadal Oscillation on springtime dust activity in Syria**

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## Supplementary figures

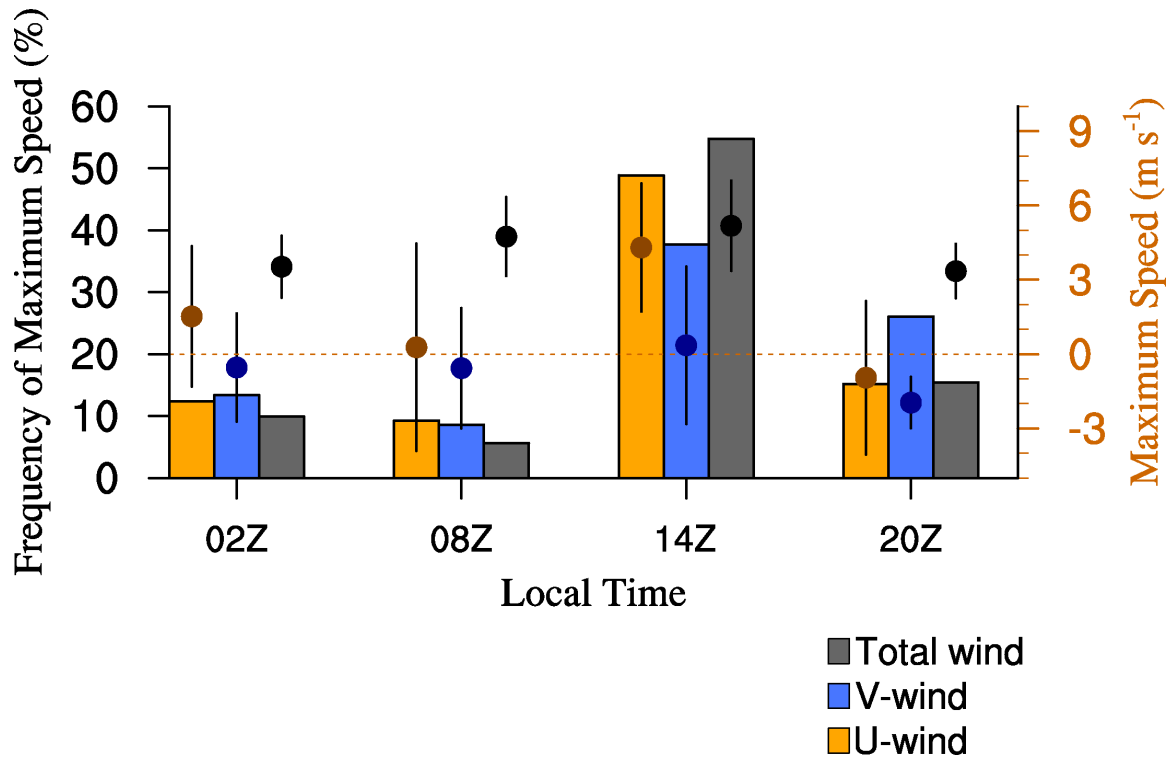


Figure S1. Frequency (bars; left y-axis) of daily maximum 10 m wind speed (zonal wind in orange, meridional wind in blue and total wind in grey) distributed at 02Z, 08Z, 14Z and 20Z local time in Syria during March-April-May from 1979-2015. Taking zonal wind speed (orange) for an example, each day maximum wind speed is determined from the absolute value of 6-hourly zonal wind speeds from the ERA-Interim. Then frequency is calculated by dividing the count of the occurrence of daily maximum at each time step to the total days. Color dots show the averaged value of maximum wind speed at each time step (right y-axis), with error bars denoting  $\pm 1$  standard deviations.

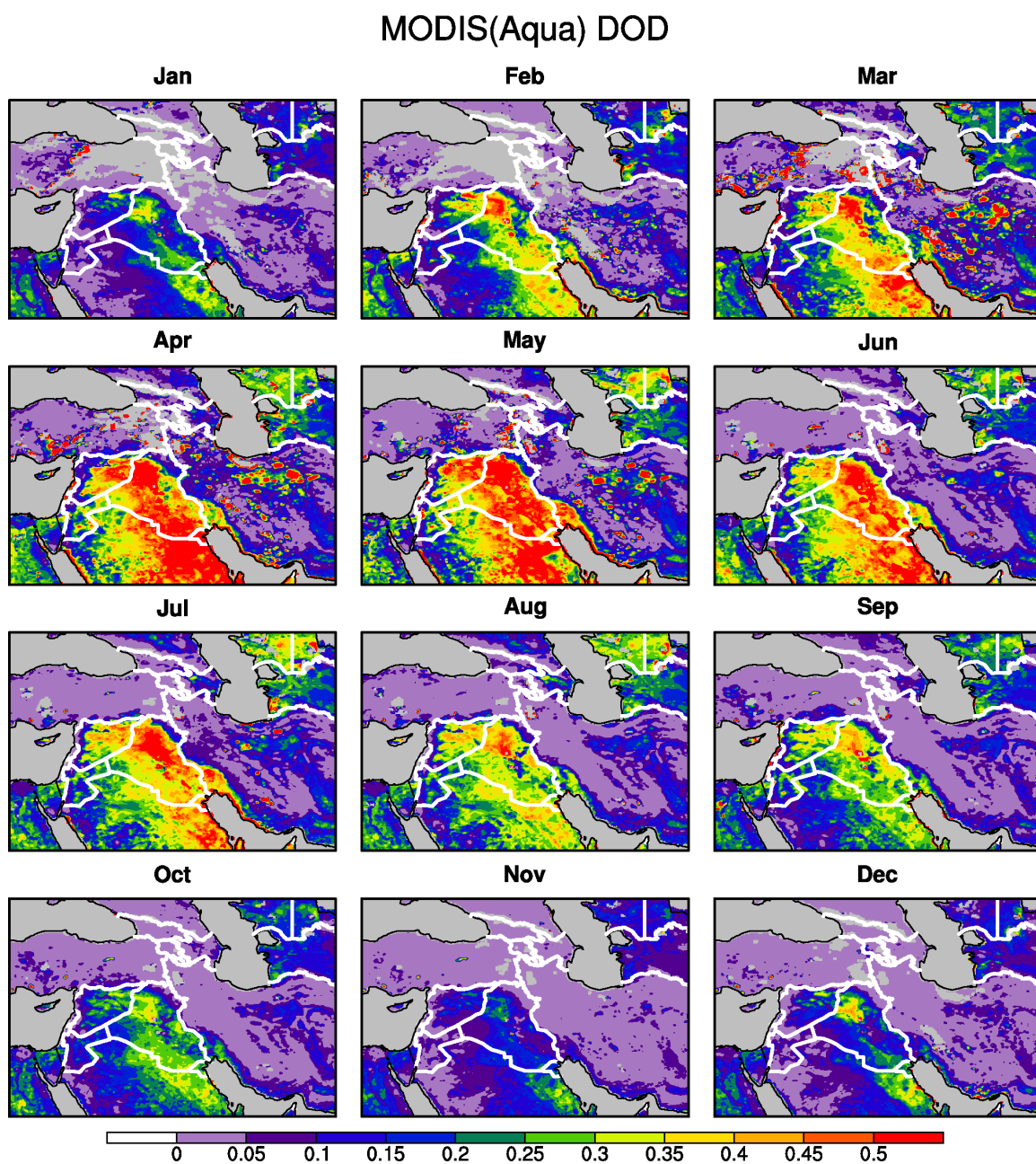


Figure S2. Monthly DOD over the study area averaged from MODIS (Aqua) daily DOD data from 2003-2015.

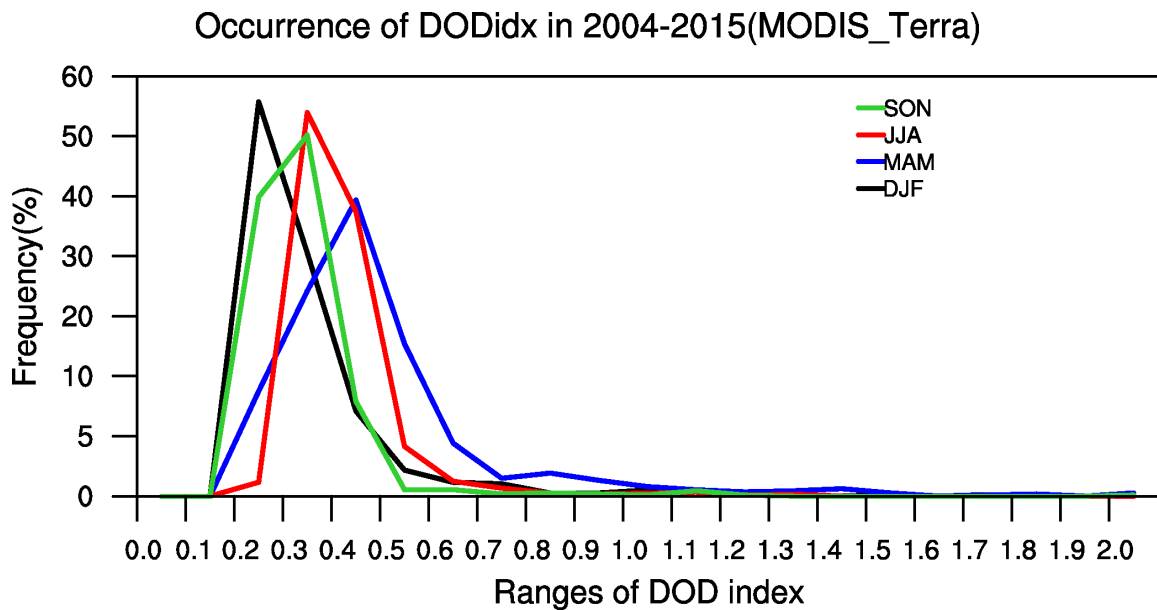
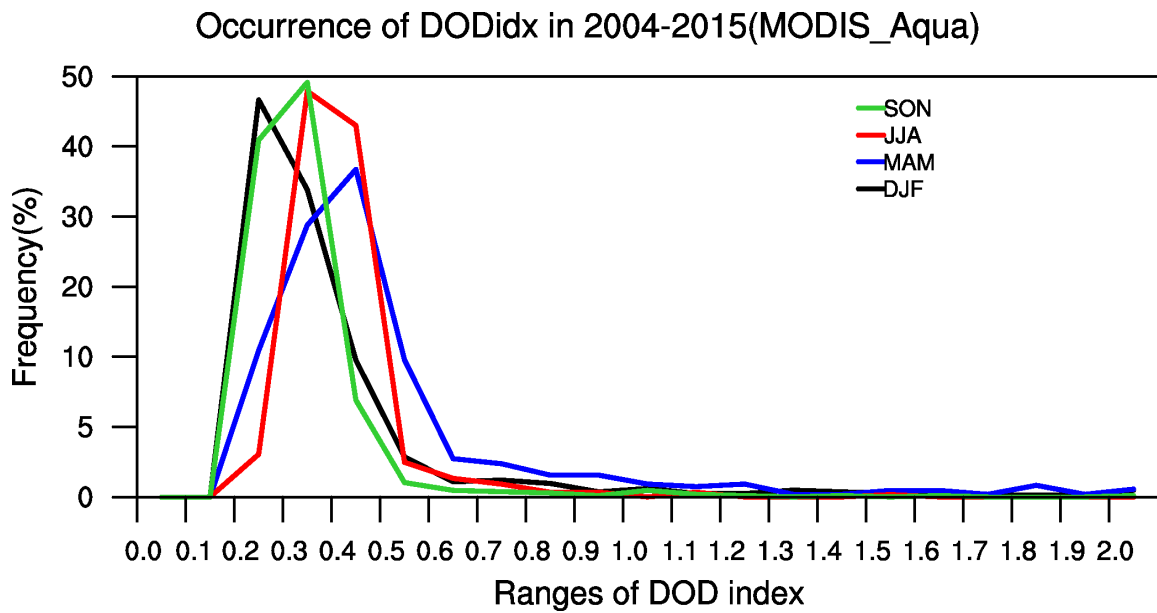


Figure S3. Frequency (%) of the occurrence of dust events in Syria for DJF (black), MAM (blue), JJA (red), and SON (green) from 2004-2015 calculated from Aqua (top) and Terra (bottom) daily DOD indices averaged over Syria (34°-36.5°N and 36.5°-41° W). The count of the occurrence of dust events in each range (x-axis) is divided by the total number of the events to get the frequency.

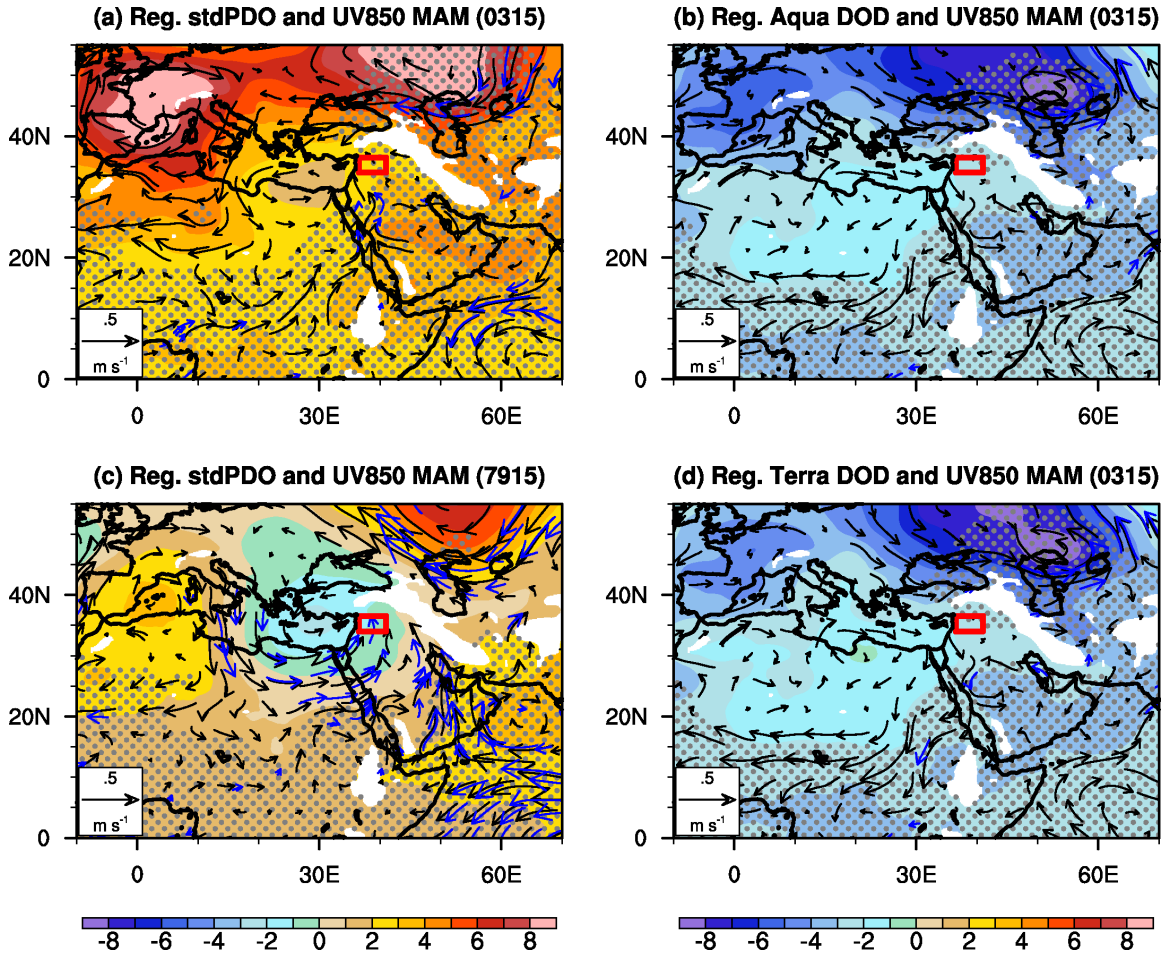


Figure S4. Regressions of ERA-Interim 850 hPa geopotential height (shading; gpm) and horizontal winds (vectors;  $\text{m s}^{-1}$ ) onto the standardized PDO index during (a) 2003-2015 and (c) 1979-2015, and onto the standardized (b) Aqua and (d) Terra DOD indices during 2003-2015. Area where the regression is significant at the 95% confidence level (t-test) is dotted, and vectors significant at the 90% confidence level are plotted in blue.

Aqua (DOD count>1std)  
**Corr. dodcount and TS MAM**

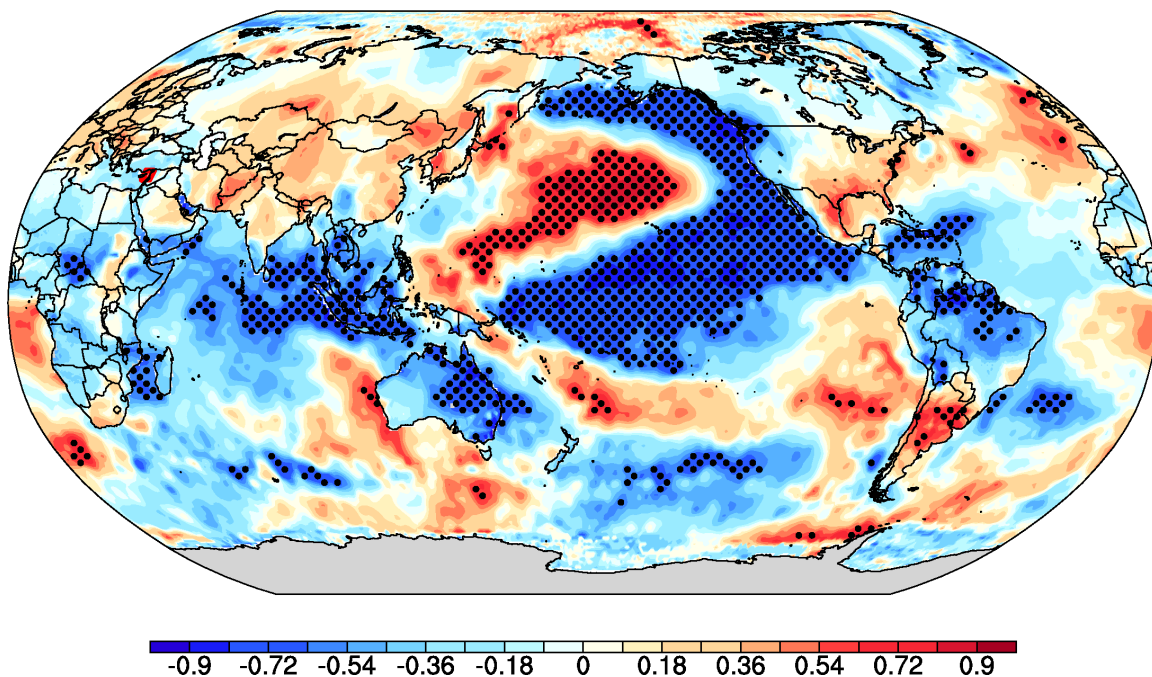


Figure S5. Correlation between Aqua DOD counts (i.e., occurrence of daily DOD anomaly in Syria greater than 1 standard deviation) in MAM and HadISST (over ocean) and CRU TS3.23 near-surface temperature (over land) from 2003-2015. Area significant at the 95% confidence level (t-test) is dotted.