**Supplement:**

**Supplement Table (see Excel file)**

Table S1. Information on automatic Surface Observation Stations (ASOS) from New Mexico and Texas used in the analysis.

Table S2. Information on PM stations used in this study.

Table S3. Meteorological parameters measured by ASOS stations during the dust event. Duration of the dust storm (DS) reported only for stations that reported visibility below 1 km. Bold numbers represent stations with visibilities < 1 km therefore DS.

Table S4. Measurements of PM2.5 and PM10 during the 26 February dust storm and the month of February 2023. Bold numbers represent significant R2 values.

Table S5. Measurements of PM10-PM2.5 and PM2.5/PM10 during the 26 February dust storm and the month of February 2023.

**Supplement Figure**

Figure S1. Daily maximum wind gusts measured on 26 February by West Texas Mesonet stations.

Figure S2. Changes in a daily average of PM2.5 (black) and PM10 (blue) for every day during the month of February 2023 with SD values for each day. The daily average for February 26 presented dust day in orange

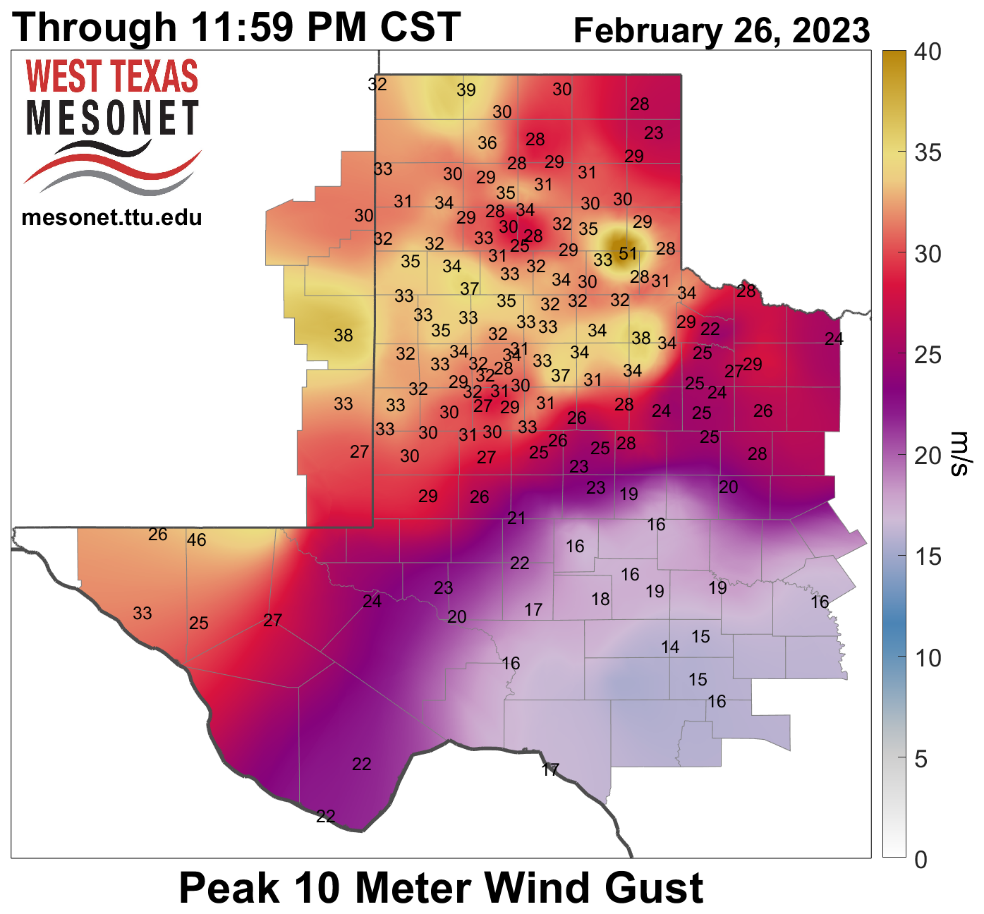


Figure S1. Daily maximum wind gusts measured on 26 February by West Texas Mesonet stations.

A screenshot of a graph

Description automatically generated

Figure S2. Changes in a daily average of PM2.5 (black) and PM10 (blue) every day during February 2023 with SD values for each day. The daily average for February 26 is presented in orange.