

Supplement of Geosci. Model Dev., 13, 2125–2147, 2020
<https://doi.org/10.5194/gmd-13-2125-2020-supplement>
© Author(s) 2020. This work is distributed under
the Creative Commons Attribution 4.0 License.



Supplement of

WRF-Chem v3.9 simulations of the East Asian dust storm in May 2017: modeling sensitivities to dust emission and dry deposition schemes

Yi Zeng et al.

Correspondence to: Minghuai Wang (minghuai.wang@nju.edu.cn)

The copyright of individual parts of the supplement might differ from the CC BY 4.0 License.

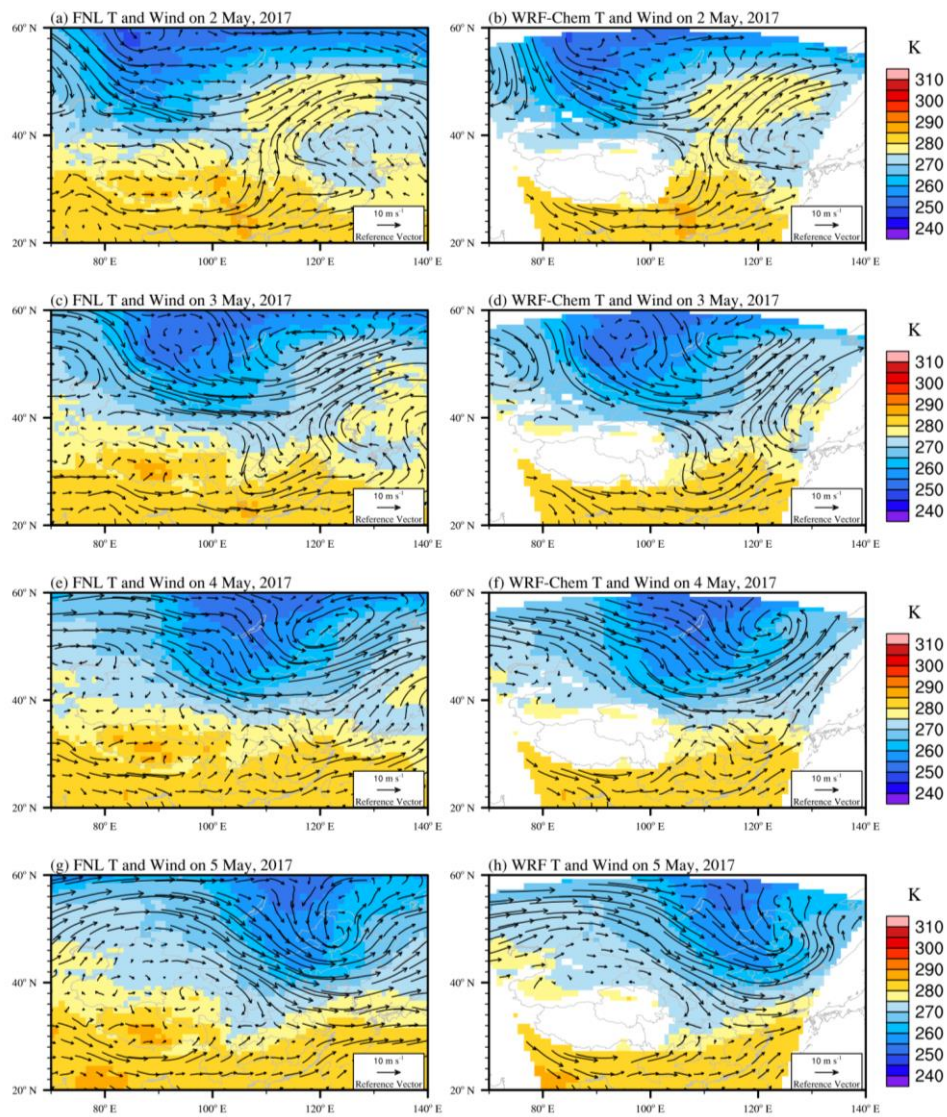


Figure S1. The meteorological conditions at 700 hPa during the dust event. The color contours show the daily mean temperature field at 700 hPa. Vectors represent the daily mean wind field at 700 hPa. Panels (a)(c)(e)(g) show the NCEP/FNL reanalysis data. Panels (b)(d)(f)(h) show the WRF-Chem simulation.

Table S1. Correlation coefficient (R) and root mean square error (RMSE) between WRF-Chem simulation and FNL reanalysis data for daily mean temperature, U component of wind, V component of wind and wind speed at 700 hPa during the dust event time period.

Day	R/RMSE	Temperature	U	V	Wind speed
1 May	R	1.0	0.89	0.90	0.93
1 May	RMSE	0.65	2.36	2.44	1.72
2 May	R	1.0	0.91	0.93	0.94
2 May	RMSE	0.69	2.61	2.77	2.05
3 May	R	1.0	0.95	0.95	0.95
3 May	RMSE	0.65	2.32	2.60	1.86
4 May	R	1.0	0.93	0.93	0.95
4 May	RMSE	0.63	2.36	2.50	1.77
5 May	R	1.0	0.96	0.92	0.97
5 May	RMSE	0.62	2.27	2.45	1.68
6 May	R	1.0	0.96	0.89	0.97
6 May	RMSE	0.68	2.43	3.09	1.72
7 May	R	1.0	0.96	0.82	0.97
7 May	RMSE	0.77	2.05	3.05	1.53
1 May to 7 May	R	1.0	0.94	0.91	0.95
1 May to 7 May	RMSE	0.67	2.34	2.70	1.76

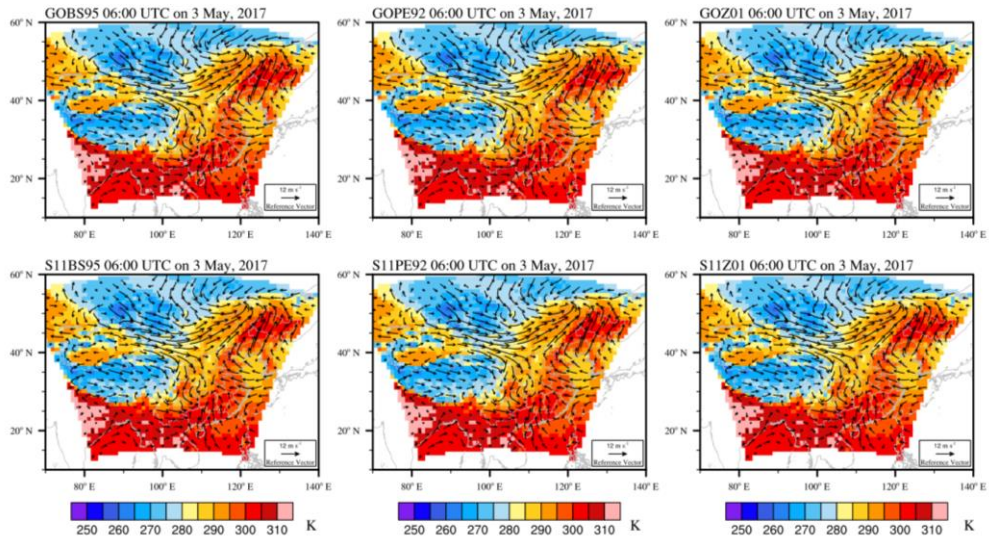


Figure S2. The meteorological conditions at 06:00 UTC on 3 May for six experiments. The color contours show the temperature field at 2 meters. Vectors represent the wind field at 10 meters.

Table S2. Correlation coefficient (R) and root mean square error (RMSE) between WRF-Chem simulation and FNL reanalysis data for time-averaged temperature at 2 meters, U component of wind, V component of wind and wind speed at 10 meters from 1 May to 7 May.

Day	R/RMSE	Temperature	U	V	Wind speed
GOBS95	R	1.0	0.90	0.86	0.80
GOBS95	RMSE	1.06	1.11	1.04	1.18
GOPE92	R	1.0	0.90	0.86	0.80
GOPE92	RMSE	1.06	1.11	1.04	1.18
GOZ01	R	1.0	0.90	0.86	0.82
GOZ01	RMSE	1.03	1.08	0.98	1.11
S11BS95	R	1.0	0.90	0.86	0.82
S11BS95	RMSE	1.03	1.08	0.98	1.11
S11PE92	R	1.0	0.90	0.86	0.82
S11PE92	RMSE	1.03	1.08	0.98	1.11
S11Z01	R	1.0	0.90	0.86	0.82
S11Z01	RMSE	1.03	1.08	0.98	1.11

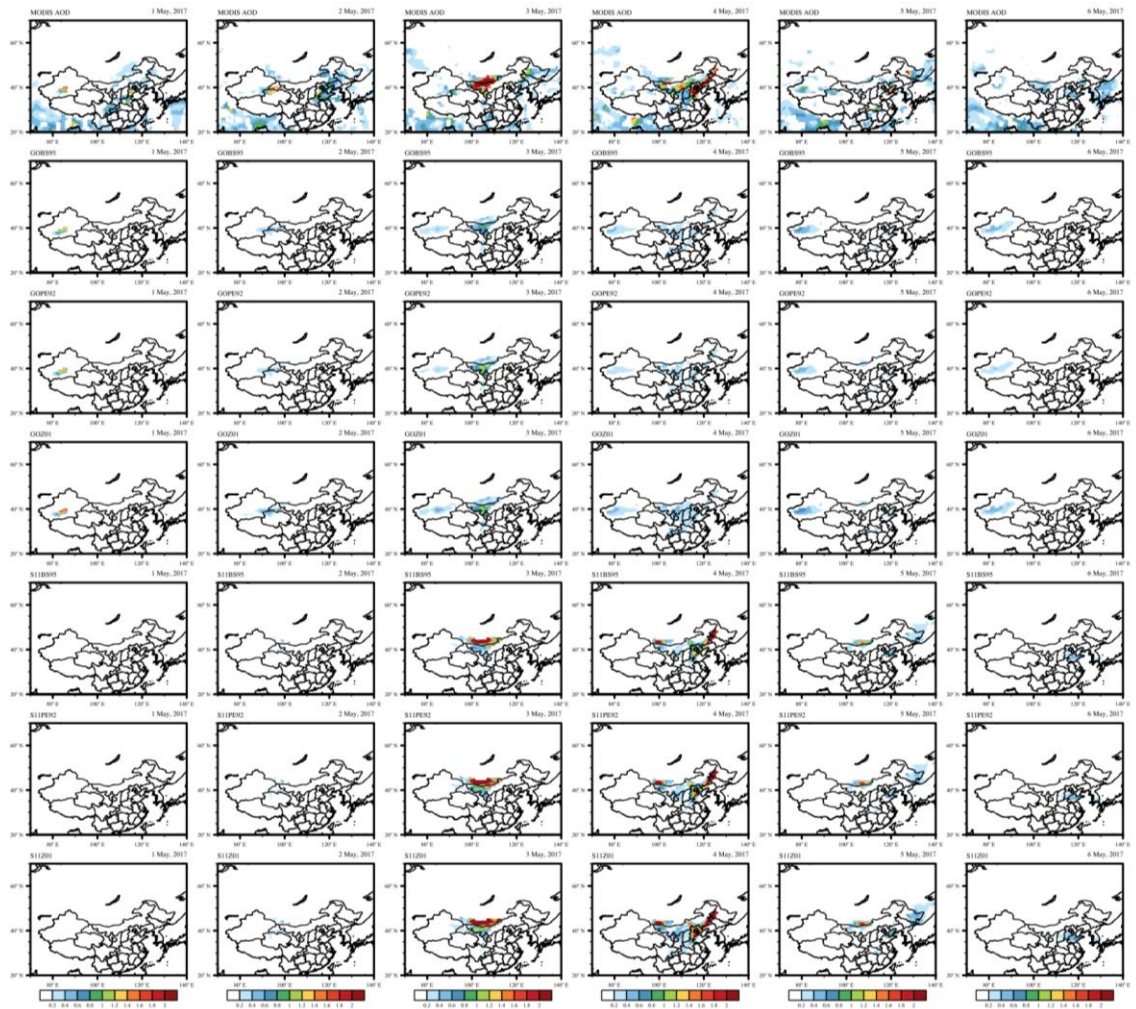


Figure S3. Simulated and observed mean AOD over the simulation period 1-6 May for six experiments. As a supplement to Fig. 9.