CHARACTERISTICS OF Asian Sand and Dust Storm Prediction System (Updated on April 2023)

1. System	
System name (Version)	CMA-CUACE/Dust (Zhou et al., 2008)
Date of implementation	17 April 2023
2. Configuration	
Horizontal resolution (Grid spacing)	54 km, (136x169 in horizontal)
Vertical resolution (model top)	23 sigma levels (100 hPa)
Forecast length (initial time)	168hours (7days)
Forced by Global model	CMA-GFS
Integration time step	60 seconds
Information on dry and wet scavenging schemes	Dry deposition: Yes (Zhang et al., 1997) Wet deposition: Yes
Dust aerosol size distribution	Sectional size distribution by 12 bins from 0.001 μm ~40 μm (Gong et al., 2003)
Dust emission scheme	Sectional dust emission scheme (Alfaro et al, 2001)
Soil erosion data base	Updated deserts and soil texture in Mongolia and China (Zhou et al., 2019)
3. Initial conditions	
Data assimilation method	warm-restart and Optimal Interpolation for Initial Conditions
4. Further information	
Operational contact point	zhouch@cma.gov.cn
URLs for system documentation	http://www.asdf-bj.net
URL for list of products	http://www.asdf-bj.net

Reference:

1、 Zhou, C., Gui, H., Hu, J., Ke, H., Wang, Y., & Zhang, X. (2019). Detection of new dust sources in central/East Asia and their impact on simulations of a severe sand and dust storm. Journal of Geophysical Research: Atmospheres, 124. Volume 124, Issue 17-18，Pages: 9771-10303，https://doi.org/10.1029/ 2019JD030753

2、 C. H. Zhou, S. L. Gong, X. Y. Zhang, Y. Q. Wang, T. Niu, H. L. Liu, T. L. Zhao, Y. Q. Yang, and Q. Hou, Development and evaluation of an operational SDS forecasting system for East Asia: CUACE/DUST，Atmos. Chem. Phys.,8, 787-798, 2008