



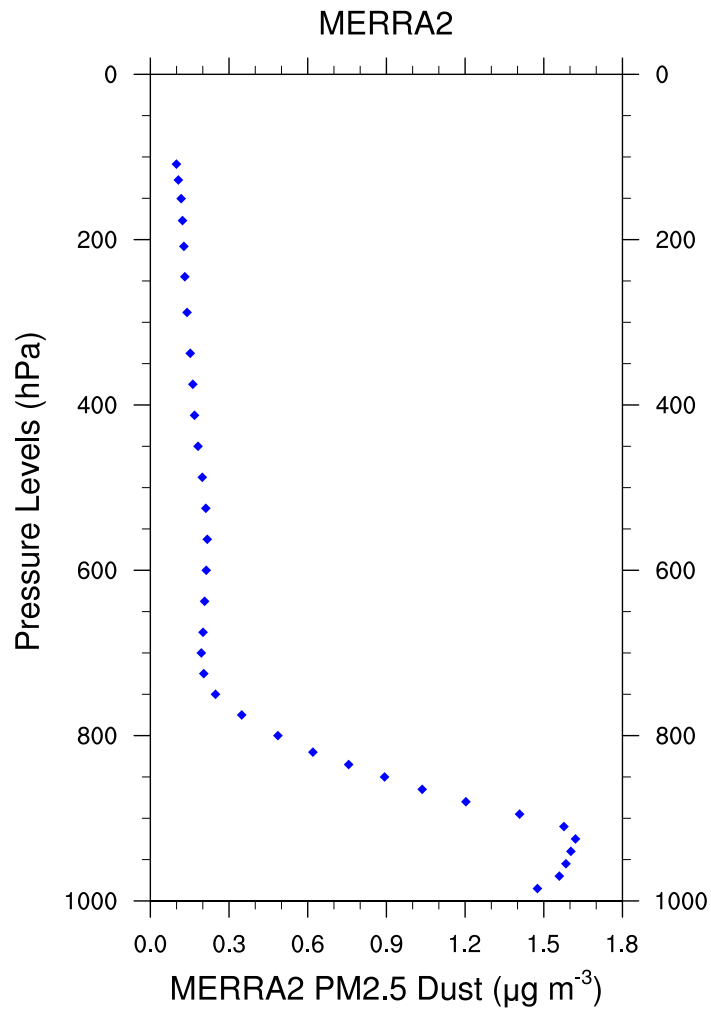
*Supplement of*

**Impacts of long-range-transported mineral dust on summertime convective cloud and precipitation: a case study over the Taiwan region**

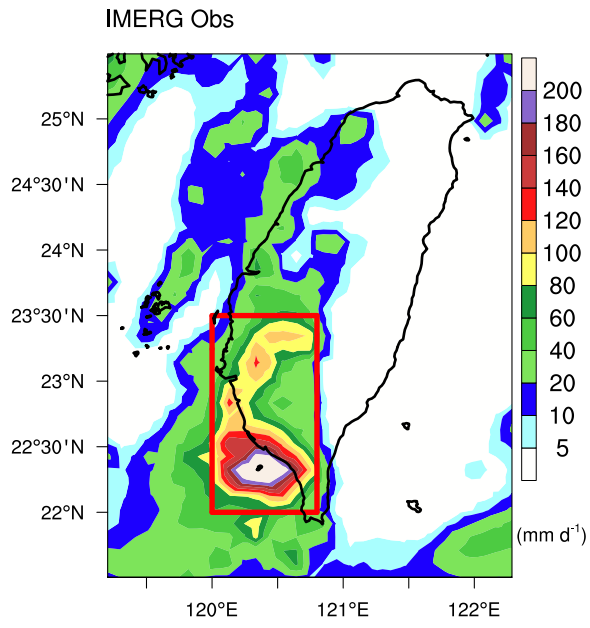
**Yanda Zhang et al.**

*Correspondence to:* Yanda Zhang (yzhang31@albany.edu) and Fangqun Yu (fyu@albany.edu)

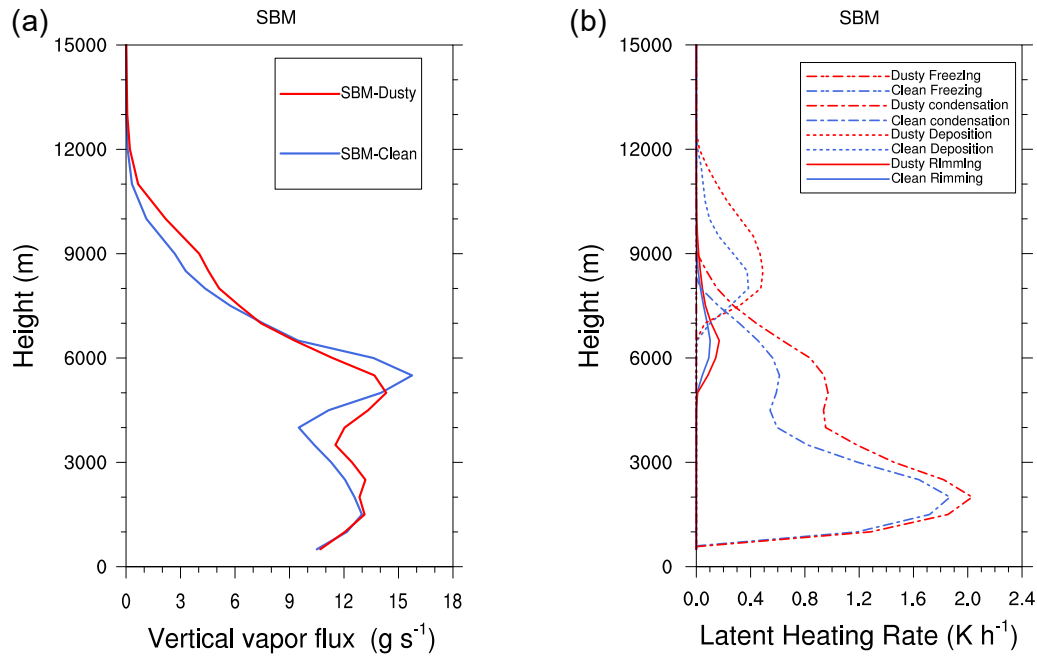
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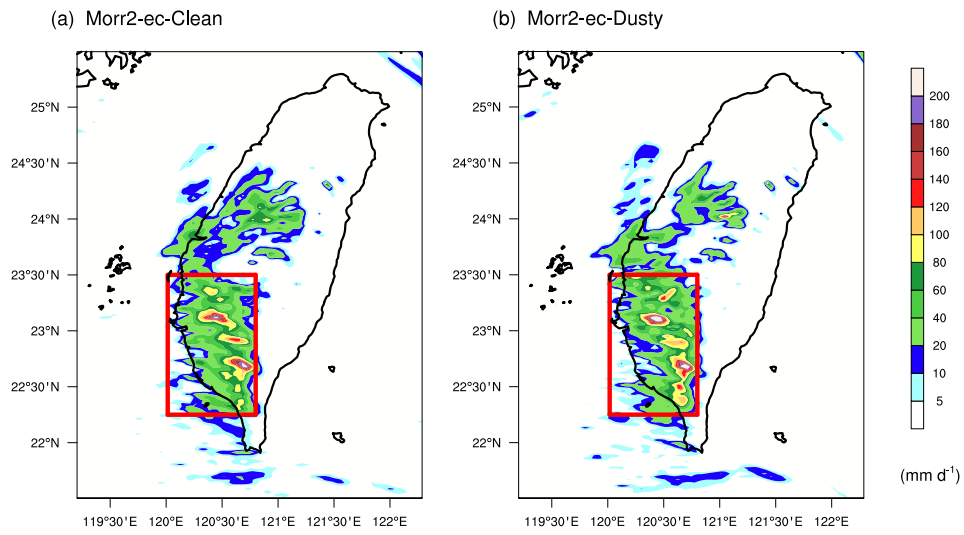
**Figure S1.** Vertical profile of MERRA-2 PM2.5 dust mixing ratio on 2006-07-08.



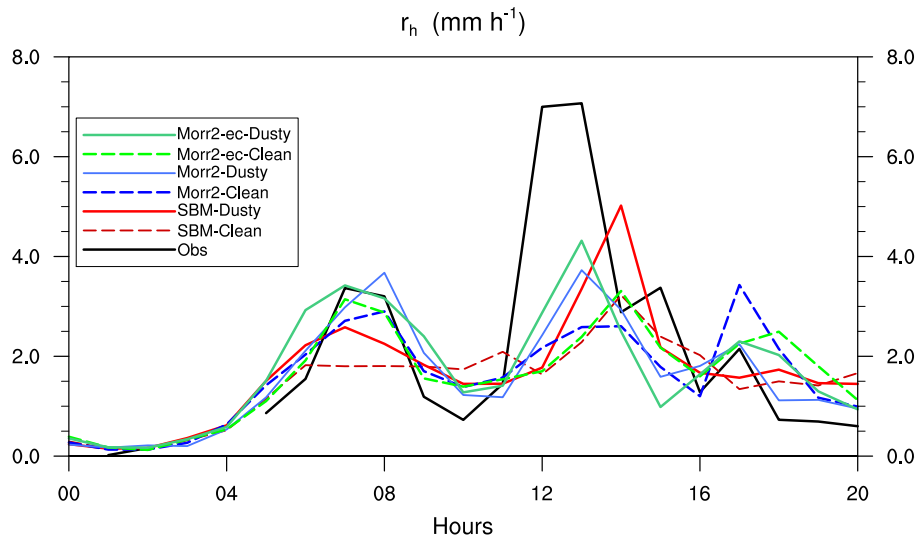
**Figure S2.** 24-hour accumulated precipitation ( $r_{24h}$ ) (LT 2006-07-08) observations from IMERG observation.



**Figure S3.** In the High-Pcp area during P2: (a) the vertical vapor flux averaged over grids with the top 10 percentiles of the updrafts (90<sup>th</sup> to 100<sup>th</sup>) simulated by the SBM-Clean (blue line) & Dusty (red line) runs; (b) vertical profiles of latent heating rates averaged among precipitation grids simulated by the SBM-Clean (blue lines) & Dusty (red lines) runs.



**Figure S4.** 24-hour accumulated precipitation (LT 2006-07-08) simulations from (a) Morr2-ec-Clean and (b) Morr2-ec-Dusty.



**Figure S5.** Hourly rainfall rates from IMERG observation (black line) and six numerical runs (colored lines) (LT 00:00–20:00, 2006-07-08), averaged among rainfall grids ( $> 0 \text{ mm hr}^{-1}$ ) in the High-Pcp area.

