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*Supplement of*

## **The 2015 and 2016 wintertime air pollution in China: SO<sub>2</sub> emission changes derived from a WRF-Chem/EnKF coupled data assimilation system**

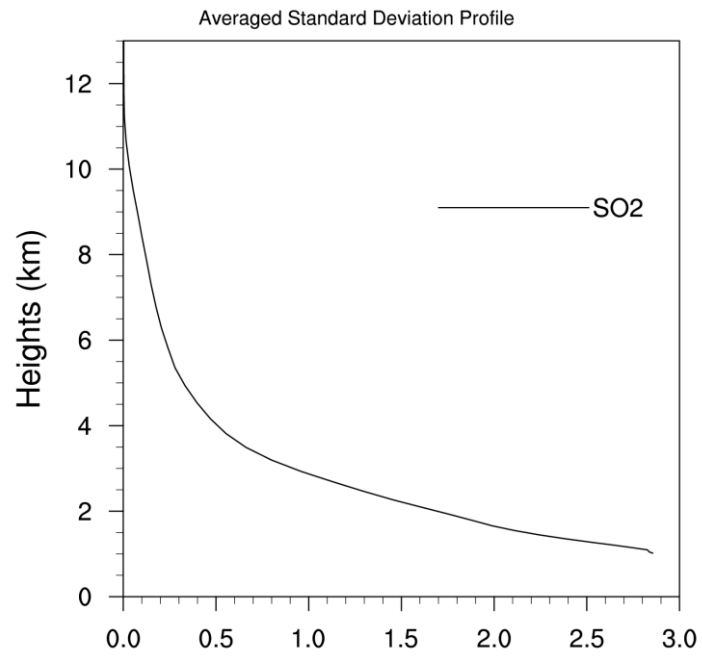
**Dan Chen et al.**

*Correspondence to:* Zhiqian Liu (liuz@ucar.edu) and Dan Chen (dchen@ium.cn)

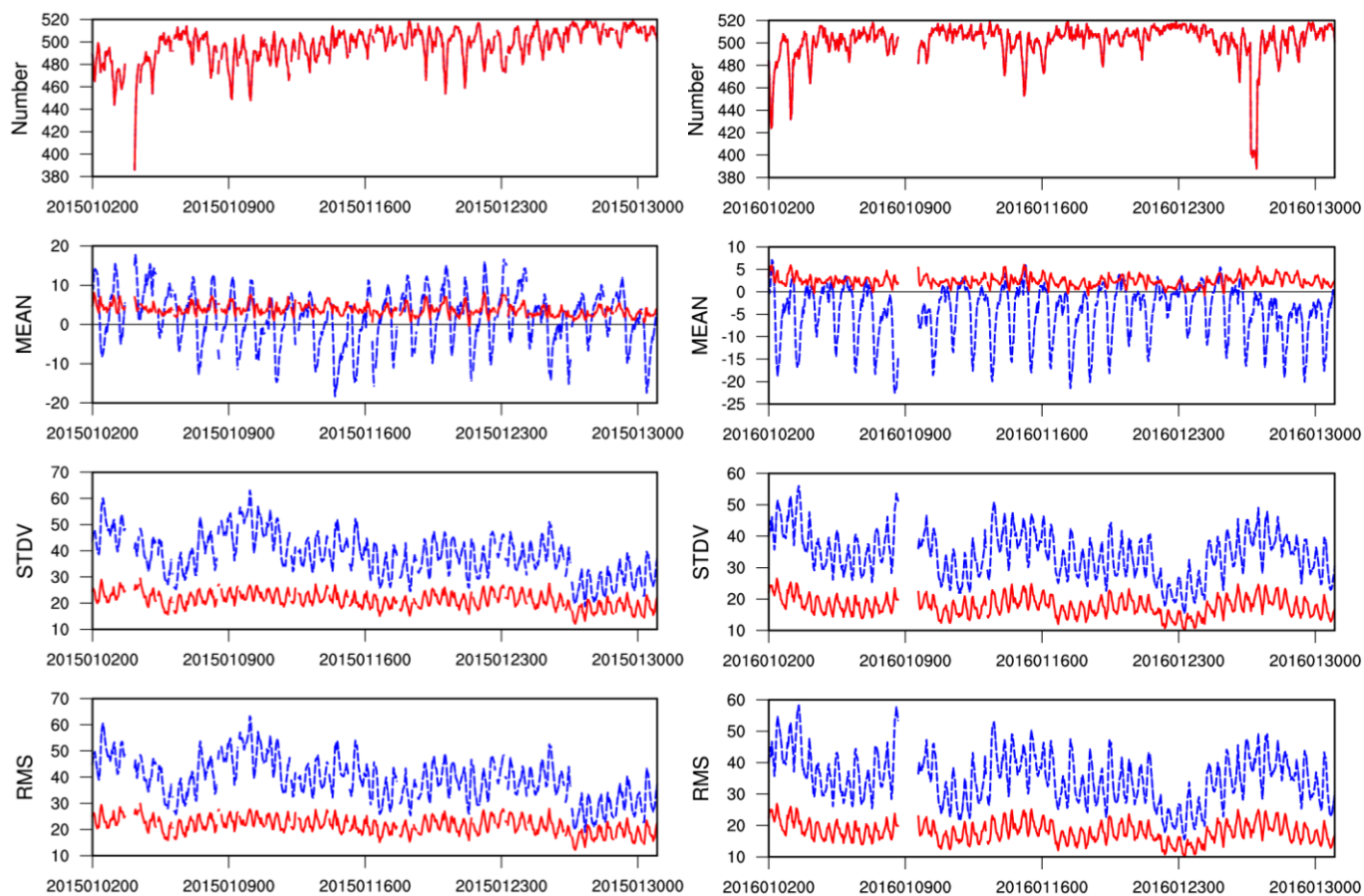
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**Figure S1.** Domain-averaged standard deviations of background errors ( $\mu\text{g m}^{-3}$ ) as a function of height for  $\text{SO}_2$ .

**Figure S2.** The time series of statistics between model simulations and observations for  $\text{SO}_2$ . O-observation, B-NO\_DA, A-CONC\_DA. Statistics includes number of data pairs, MEAN-mean bias, STDV- standard deviation, RMSE-root mean square error. Left:2015, right-2016.



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