

Supplementary information for **Impacts of aerosol concentration on precipitation pattern of tropical cyclones in South China area**

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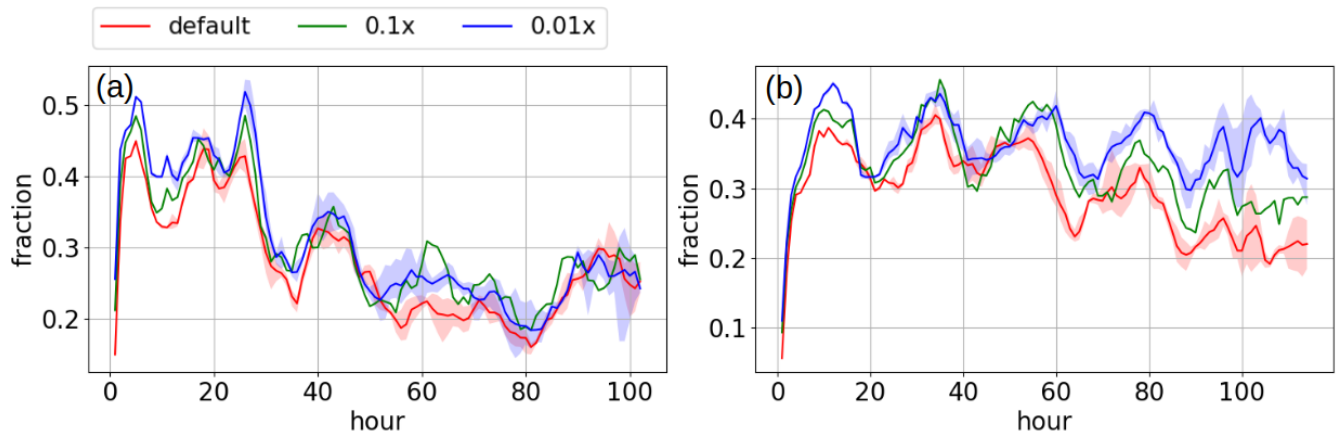
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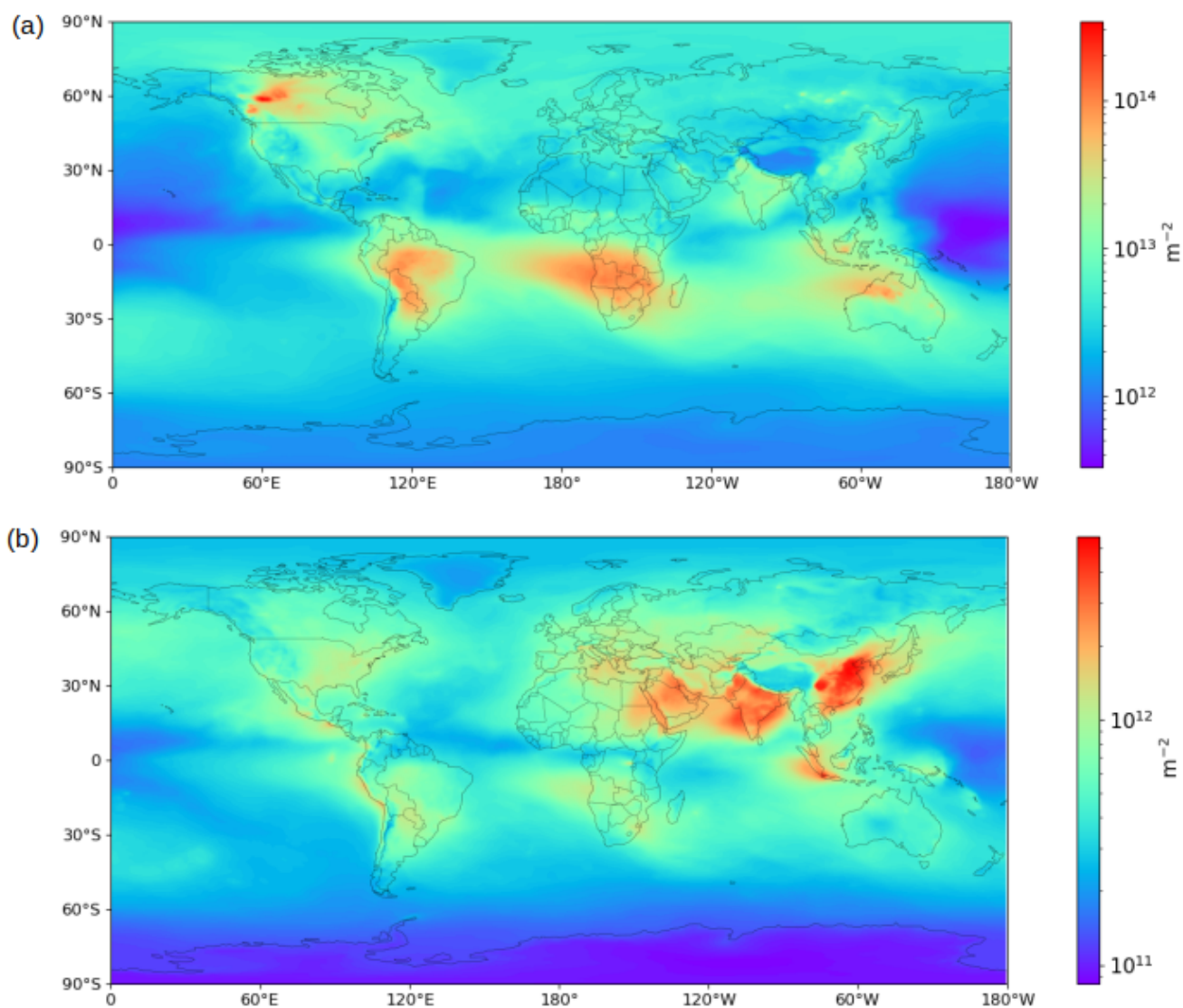
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Supplementary Figures 1 and 2

Supplementary Figures



Supplementary Figure 1. Fraction of area with precipitation exceeding 0.1 mm h^{-1} (a) $600 \times 600 \text{ km}$ region around low pressure centre of Koinu and (b) $800 \times 800 \text{ km}$ region around low pressure centre of Haikui. Default experiment is in red, 0.1x is in green and 0.01x is in blue. Shaded regions mark the range of the results from the three simulations with different perturbations.



Supplementary Figure 2. Global aerosol concentration Average column number density of (a) organic carbon and (b) sulphates in September to October, 2023. Hourly column mass density of the two species were obtained from MERRA-2¹, and the column number density was calculated by assuming that the aerosol sizes follow a lognormal distribution and using the effective radii and geometric standard deviations from Chin et al.².

References

1. Global Modeling and Assimilation Office (GMAO). MERRA-2 tavg1_2d_aer_Nx: 2d,1-Hourly,Time-averaged,Single-Level,Assimilation,Aerosol Diagnostics V5.12.4, DOI: [10.5067/KLICLTZ8EM9D](https://doi.org/10.5067/KLICLTZ8EM9D) (2015). Accessed: 2024-03-26.
2. Chin, M. *et al.* Tropospheric aerosol optical thickness from the GOCART model and comparisons with satellite and sun photometer measurements. *J. Atmospheric Sci.* **59**, 461–483 (2002).