

# Supporting Information for "Understanding the Roles of Convection Parameterization in the Simulation of South Pacific Convergence Zone in the NCAR CAM"

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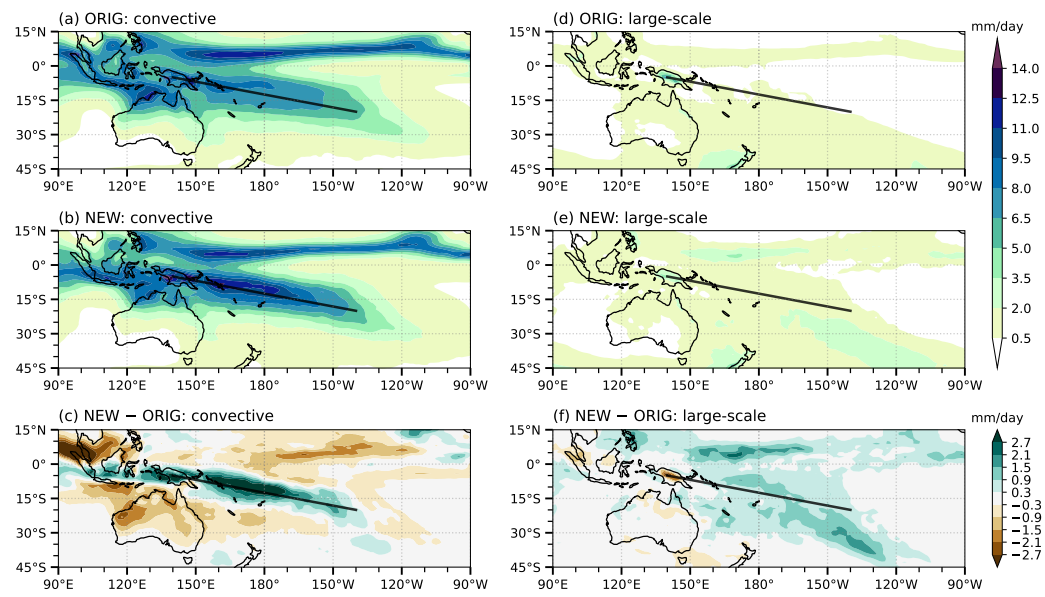
Beijing, China

## Contents of this file

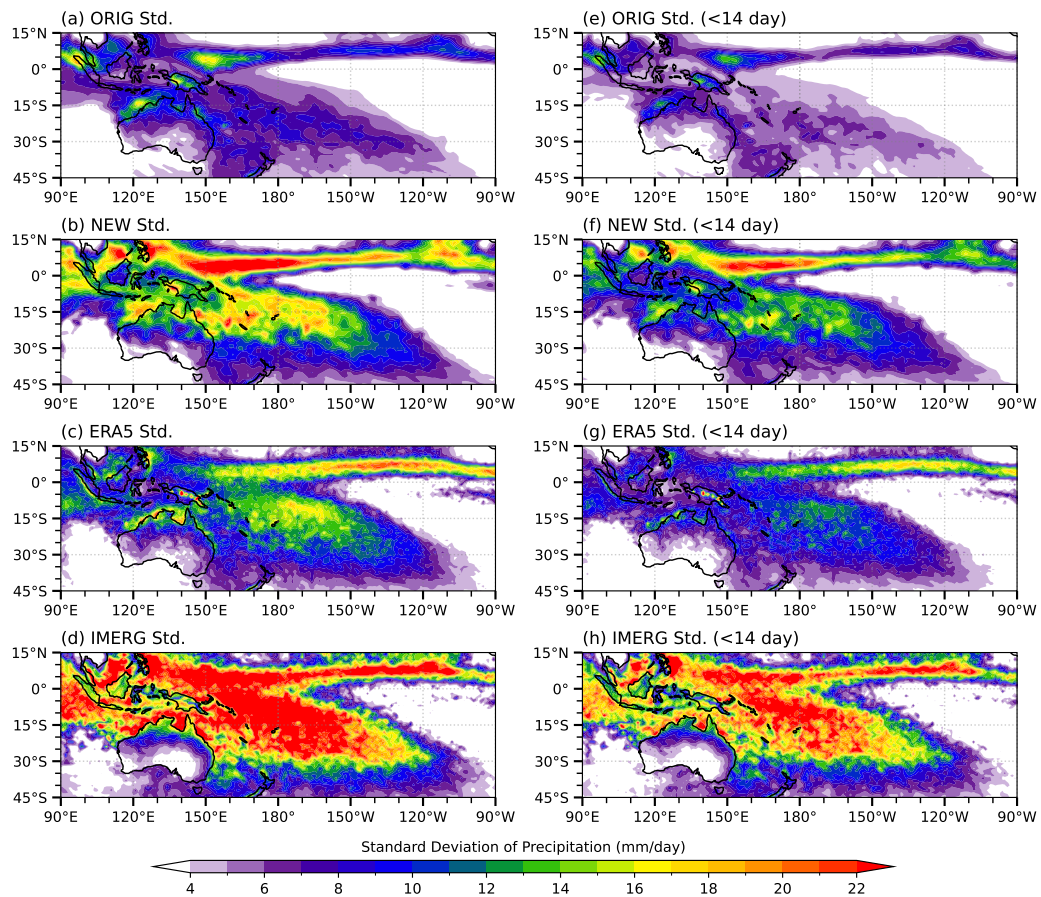
1. Figures S1 to S4

## References

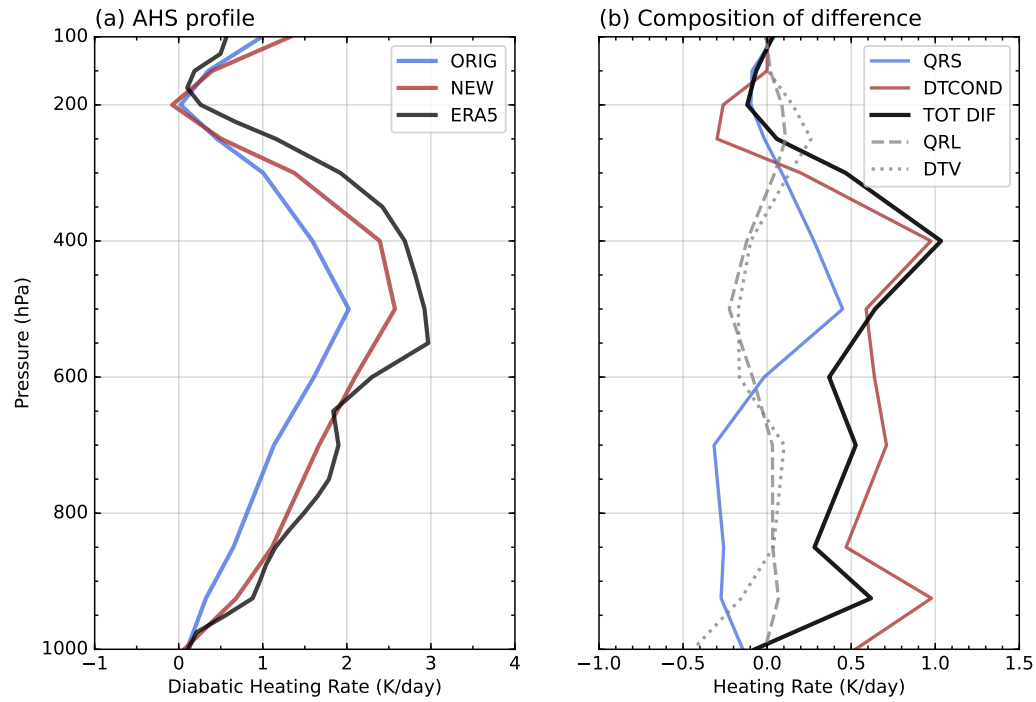
Yanai, M., Esbensen, S., & Chu, J.-H. (1973, May). Determination of bulk properties of tropical cloud clusters from large-scale heat and moisture budgets. *Journal of the Atmospheric Sciences*, 30(4), 611–627. Retrieved from [http://dx.doi.org/10.1175/1520-0469\(1973\)030<0611:DOBPOT>2.0.CO;2](http://dx.doi.org/10.1175/1520-0469(1973)030<0611:DOBPOT>2.0.CO;2) doi: 10.1175/1520-0469(1973)030<0611:dobpot>2.0.co;2



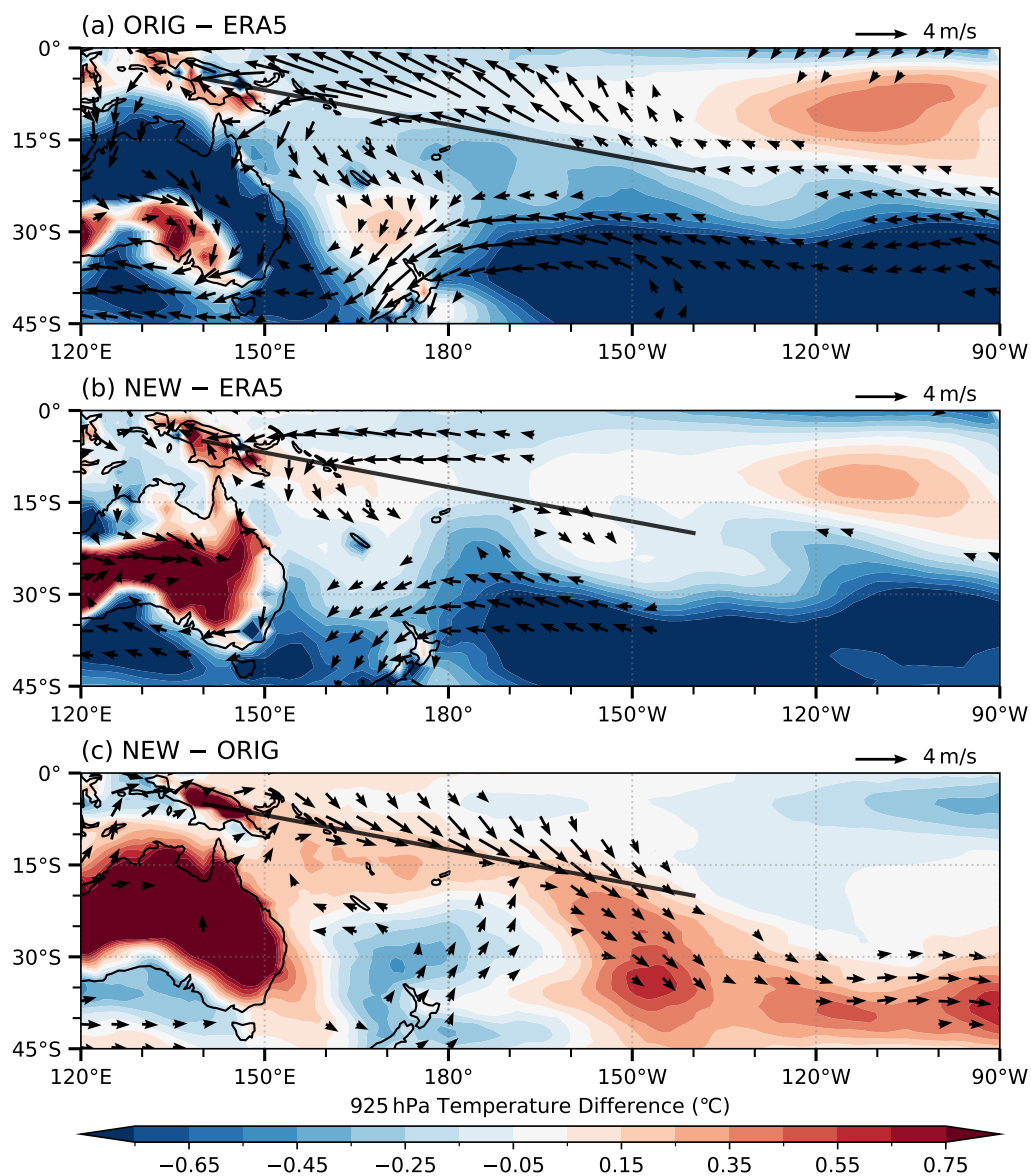
**Figure S1.** Time-mean seasonal-mean (December–February) distributions of (a-b) convective precipitation, (d-e) large-scale precipitation, and (c,f) difference of convective and large-scale precipitation between NEW and ORIG.



**Figure S2.** Spatial distribution of (a-d) the standard deviation of precipitation in all frequencies, and (e-f) the standard deviation of high-frequency precipitation ( $\leq 14$  day) in different products.



**Figure S3.** Mean profiles of (a) apparent heat source calculated following Yanai et al. (1973), and (b) the contribution to the total diabatic heating rate difference between NEW and ORIG (TOT DIF) from condensation (DTCOND), short-wave (QRS), long-wave (QRL), and vertical diffusion (DTV).



**Figure S4.** Time-mean seasonal-mean (December–February) distribution of 925 hPa temperature difference between: (a) ORIG and ERA5, (b) NEW and ERA5, and (c) NEW and ORIG.