

**Electronic Supplementary Material to:  
Impact of Revised Trigger and Closure of the Double-Plume Convective  
Parameterization on Precipitation Simulations over East Asia\***

Xiaohan LI<sup>1,2</sup>, Yi ZHANG<sup>1,2</sup>, Yanluan LIN<sup>3</sup>, Xindong PENG<sup>1,4</sup>,  
Baiquan ZHOU<sup>1</sup>, Panmao ZHAI<sup>1</sup>, and Jian LI<sup>1</sup>

<sup>1</sup>*State Key Laboratory of Severe Weather, Chinese Academy of Meteorological Sciences, Beijing 100081, China*

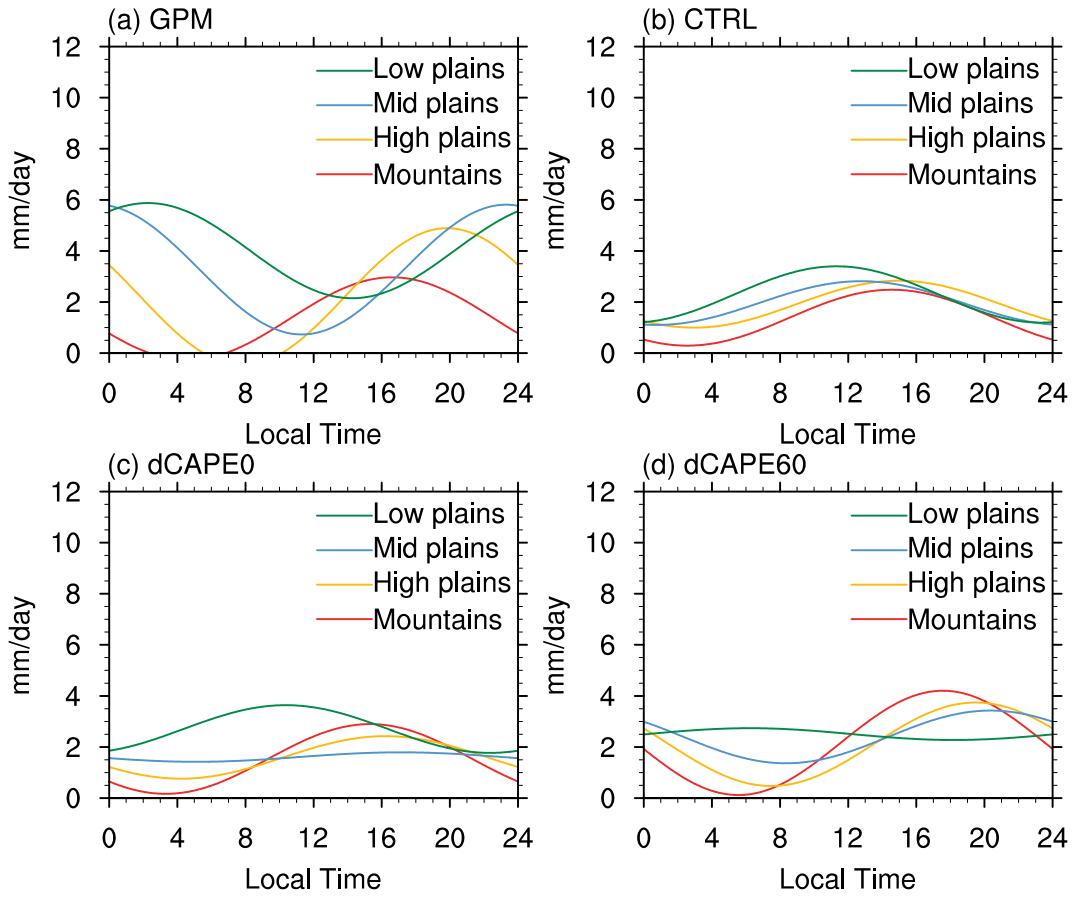
<sup>2</sup>*2035 Future Laboratory, PIESAT Information Technology Co Ltd., Beijing 100195, China*

<sup>3</sup>*Department of Earth System Science, Ministry of Education Key Laboratory for Earth System Modeling,  
Institute for Global Change Studies, Tsinghua University, Beijing 100084, China*

<sup>4</sup>*CMA Earth System modeling and Prediction Center, Beijing 100081, China*

**ESM to:** Li, X. H., Y. Zhang, Y. L. Lin, X. D. Peng, B. Q. Zhou, P. M. Zhai, and J. Li., 2023: Impact of revised trigger and closure of the double-plume convective parameterization on precipitation simulations over East Asia. *Adv. Atmos. Sci.*, **40**(7), 1225–1243, <https://doi.org/10.1007/s00376-022-2225-9>.





**Fig. S1.** Composite diurnal cycle of the boreal summer precipitation from (a) the GPM and (b–d) model simulations over four sub-regions from the downstream of the Rockies to the adjacent Great Plains: mountain regions ( $37^{\circ}$ – $40^{\circ}$ N,  $105^{\circ}$ – $108^{\circ}$ W, red), high plains ( $37^{\circ}$ – $40^{\circ}$ N,  $101^{\circ}$ – $104^{\circ}$ W, yellow), middle plains ( $37^{\circ}$ – $40^{\circ}$ N,  $97^{\circ}$ – $100^{\circ}$ W, blue), and low plains ( $37^{\circ}$ – $40^{\circ}$ N,  $93^{\circ}$ – $96^{\circ}$ W, green). The first diurnal harmonic of precipitation is calculated for each grid box within the sub-regions. The composite lines show the average of the grid boxes.