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Supplemental Material

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The Signature of Shallow Circulations, Not Cloud Radiative Effects, in the Spatial Distribution of Tropical Precipitation

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1 **Supplementary Material: The signature of shallow circulations, not**
2 **cloud-radiative effects, in the spatial distribution of tropical precipitation**

3 Dagmar Fläschner, Thorsten Mauritsen, Bjorn Stevens*

4 *Max Planck Institute for Meteorology, Hamburg, Germany*

5 Sandrine Bony

6 *LMD/IPSL, CNRS, Sorbonne Universities, Paris, France*

7 **Corresponding author address:* Atmosphere in the Earth System, Max Planck Institute for Mete-
8 orology, Bundesstraße 53, 20146 Hamburg, Germany
9 E-mail: bjorn.stevens@mpimet.mpg.de

ABSTRACT

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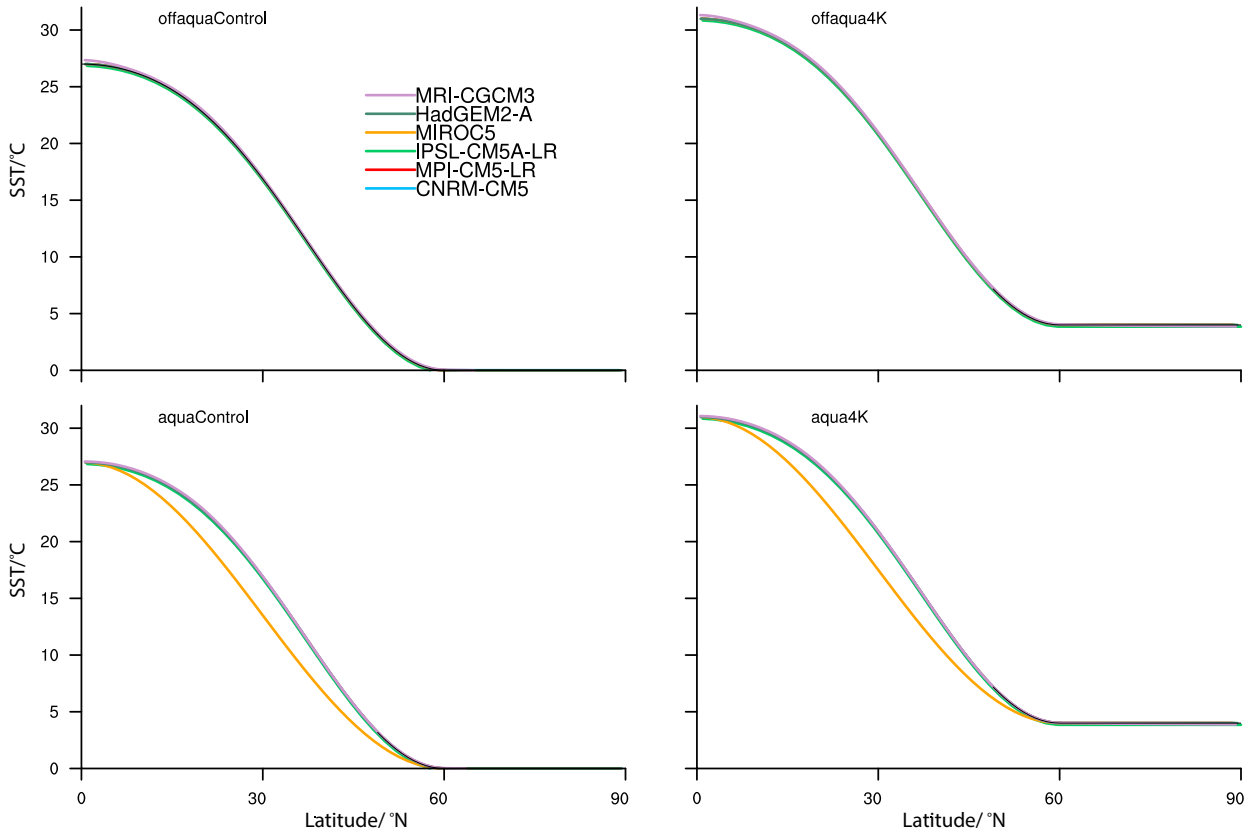
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16 **Fig. S3.** Analog to Figure 8 but with a more symmetric deep-mode structure used ($a = 1.7$ and
17 $b = 1.8$). Comparison of the predicted zonal-mean ($\overline{\omega}_j^v$) with the model vertical velocity ($\overline{\omega}_{\text{model}}^v$). The prediction is estimated with Eq. 4 using Q_j and each model's gross moist
18 stability. Note that zonal-means are symmetrized between both hemispheres, such that end-
19 points of the lines correspond to the equator where $\overline{\omega}_{\text{model}}^v$ is negative, and positive end-
20 points to $\pm 30^\circ$. In f) the root-mean-square-error (RMSE) is shown for the individual models. . . . 6



22 FIG. S1. Latitudinal variation in sea-surface temperature (SST) for different models and different experiments.

23 Where individual models are not identifiable they are all overlapped.

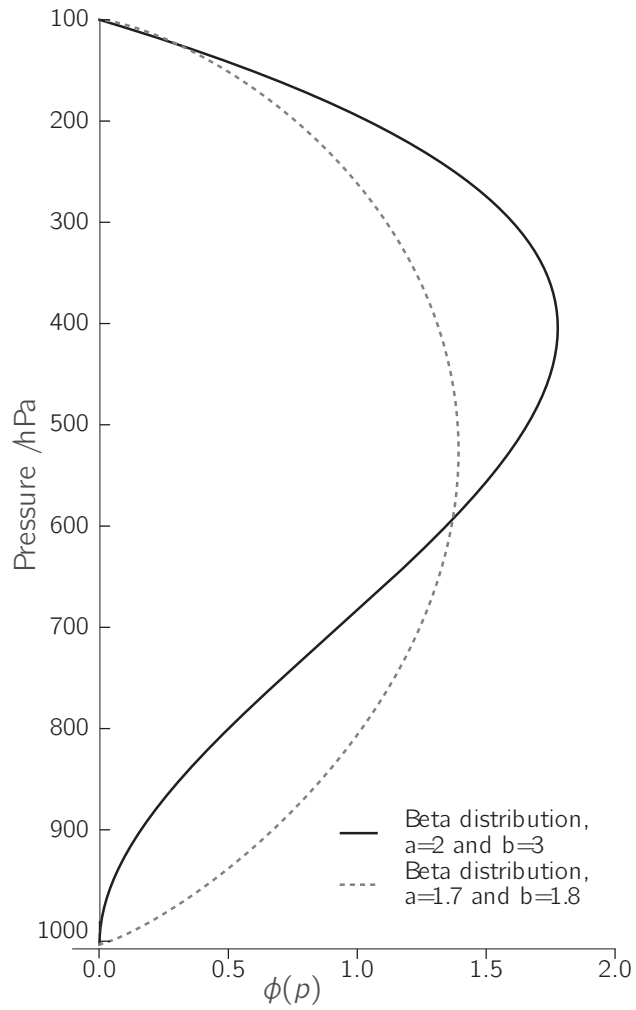
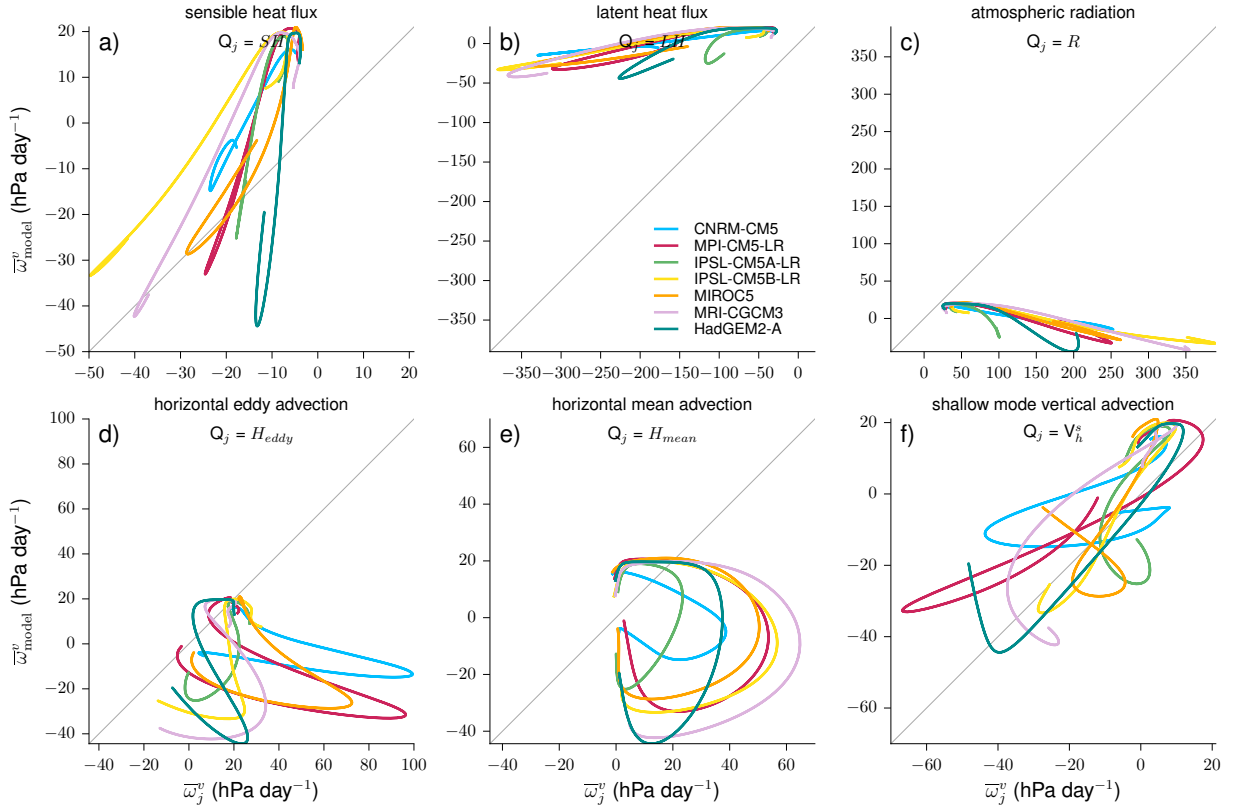


FIG. S2. Vertical basis functions for deep mode vertical pressure velocity.



24 FIG. S3. Analog to Figure 8 but with a more symmetric deep-mode structure used ($a = 1.7$ and $b = 1.8$).
 25 Comparison of the predicted zonal-mean ($\overline{\omega}^v_j$) with the model vertical velocity ($\overline{\omega}^v_{\text{model}}$). The prediction is
 26 estimated with Eq. 4 using Q_j and each model's gross moist stability. Note that zonal-means are symmetrized
 27 between both hemispheres, such that endpoints of the lines correspond to the equator where $\overline{\omega}^v_{\text{model}}$ is negative,
 28 and positive endpoints to $\pm 30^\circ$. In f) the root-mean-square-error (RMSE) is shown for the individual models.