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Supplemental Material

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1 **Supplemental Material for “Decomposing the Drivers of Polar**

2 **Amplification with a Single Column Model”**

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21 the bias in net surface shortwave radiation. When a surface heat source (Q_S)
22 is present at high latitudes, the surface turbulent heat fluxes are smaller, hence
23 Q_{bias} is reduced. 4

Experiment	Tropics	Pole (4xCO ₂)	Pole (4xCO ₂ +12)	Pole (4xCO ₂ +24)
CO ₂	30.0	26.2	26.2	26.2
q (local and remote)	30.0	26.2	26.2	26.2
Diffusion	30.0	26.2	26.2	26.2
ET (dry and moist)	30.0	26.2	26.2	26.2
Q_s	N/A	N/A	34.5	40.5
All	30.0	26.2	34.5	40.5

24 Table S1. Value of the bias term (Q_{bias} in $W m^{-2}$) for each single column model experiment. Q_{bias} accounts
25 for the difference between the GCM's surface turbulent (sensible and latent) heat fluxes and the SCM's surface
26 convection term, and the bias in net surface shortwave radiation. When a surface heat source (Q_s) is present at
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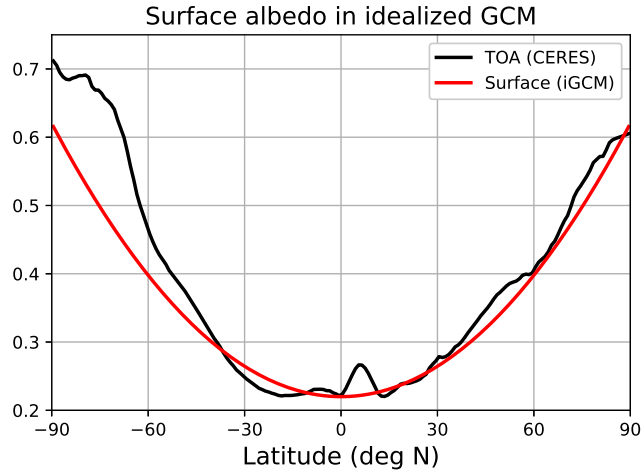
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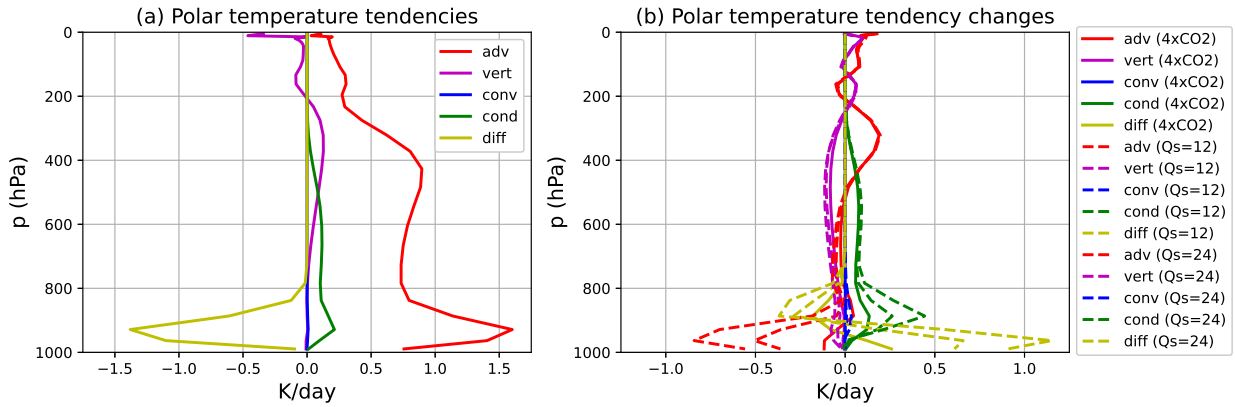
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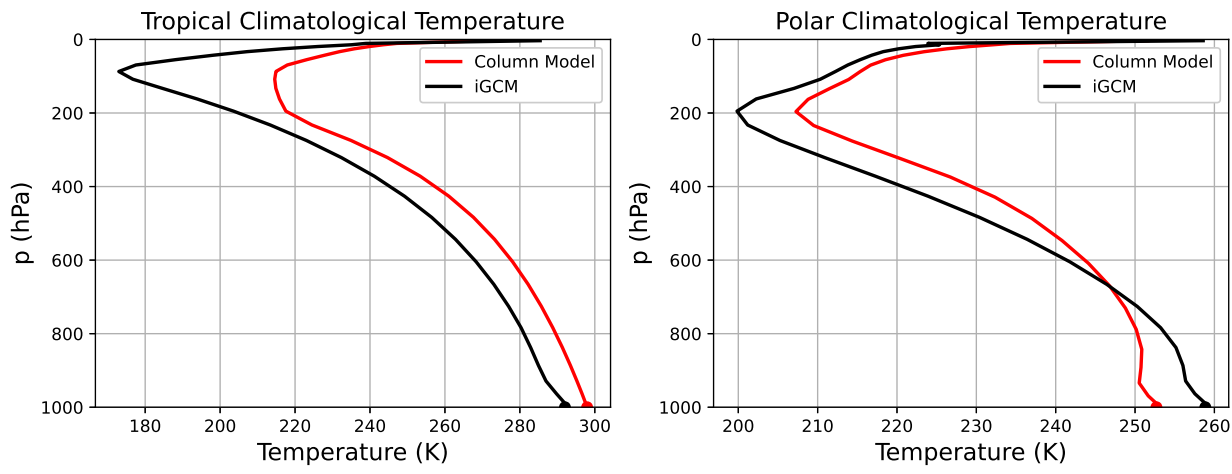
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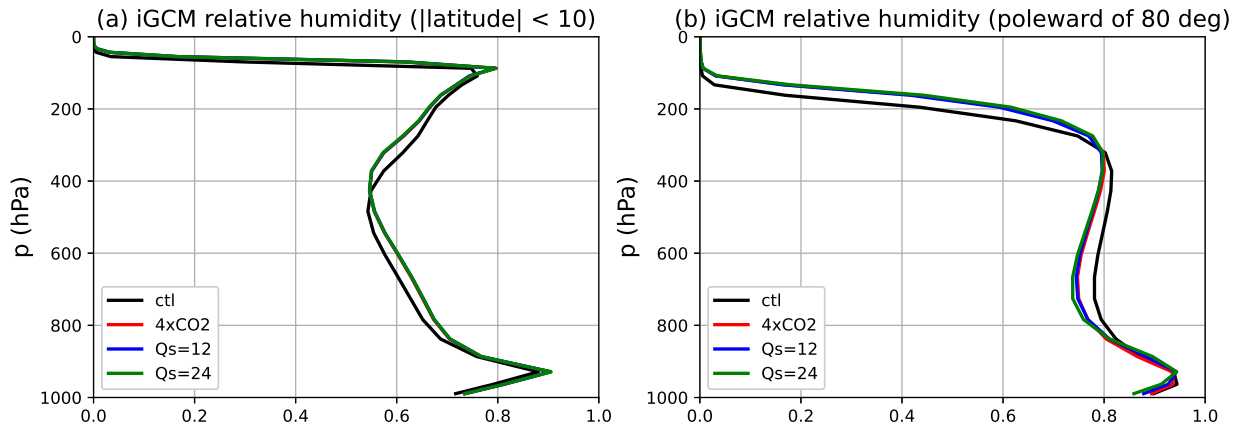
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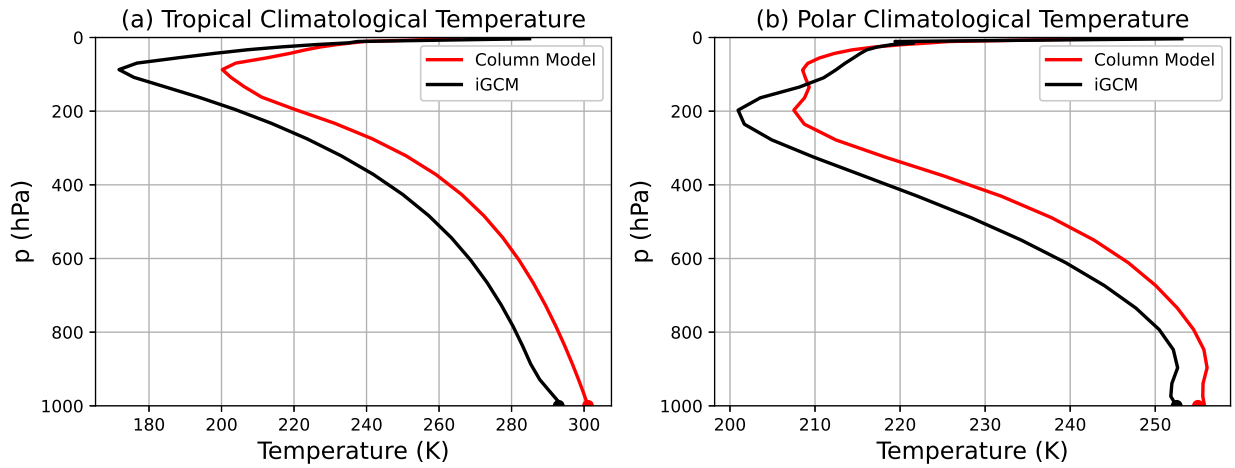
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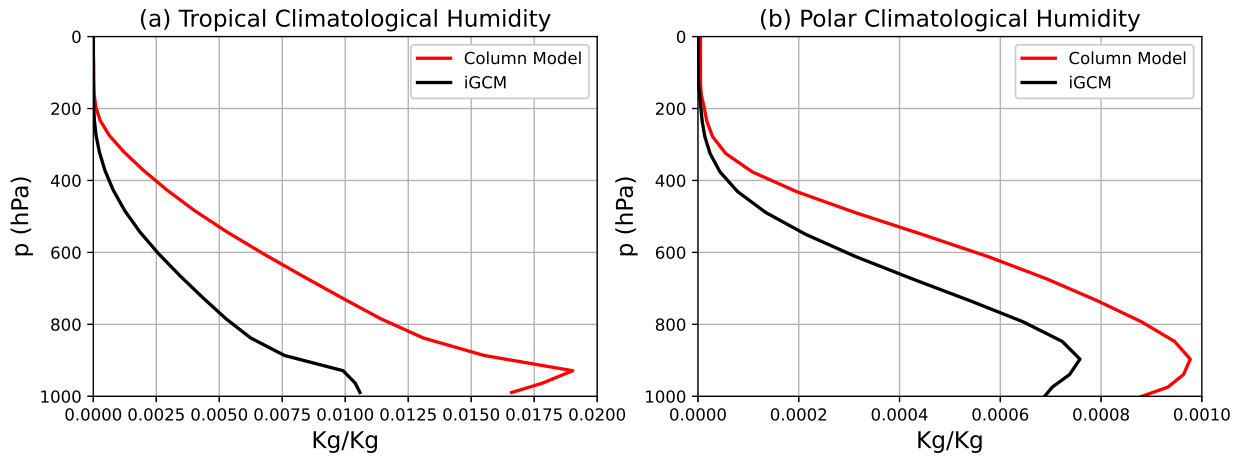
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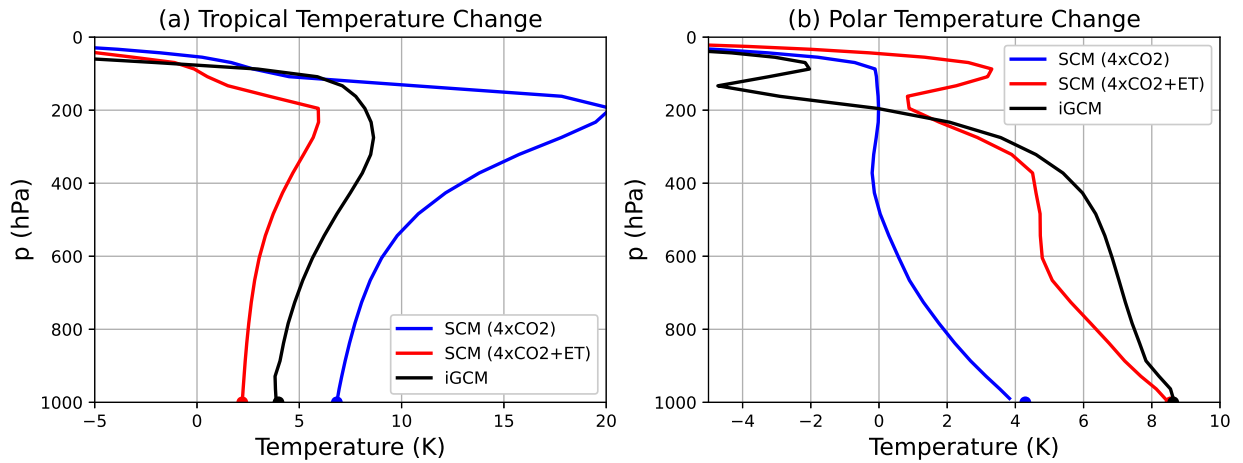
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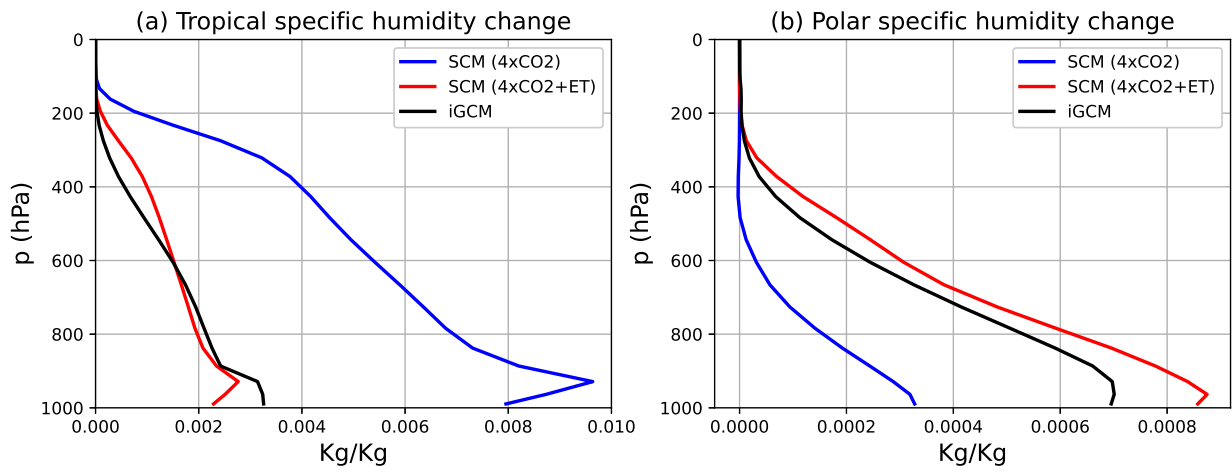
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