Supporting Information for

Climatology of Cloud-Land-Surface Coupling Across Different ARM Sites

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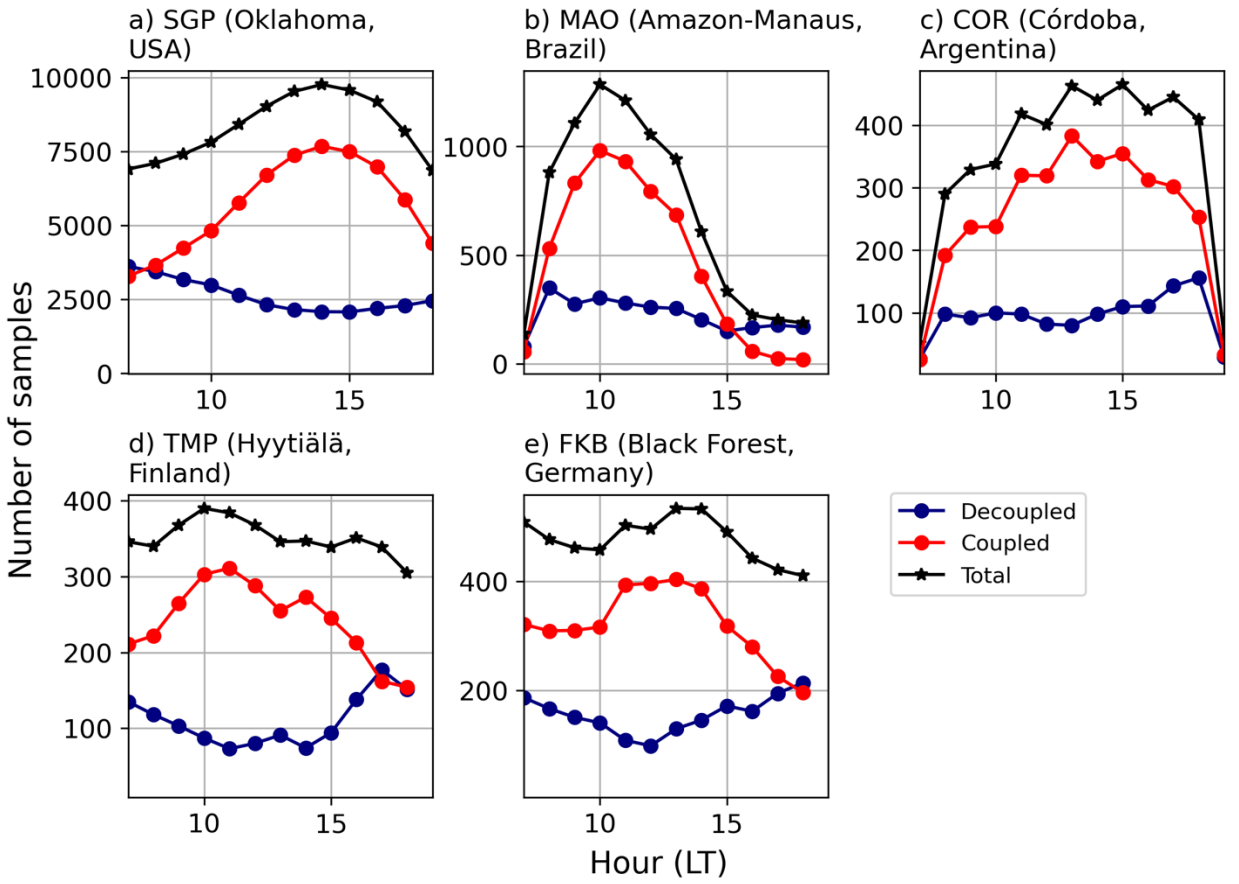

Figure S1 Diurnal variability of the number of samples of coupled (red line), decoupled (blue line), and total clouds (black line) at the five ARM observatories. In the figure, the observed diurnal variability of the total number of clouds is driven by the changes in the number of coupled clouds rather than decoupled ones. Suggesting that the percentage of decoupled clouds increases in the afternoon not only due to the growth of the PBLH but also because more clouds are being formed locally.

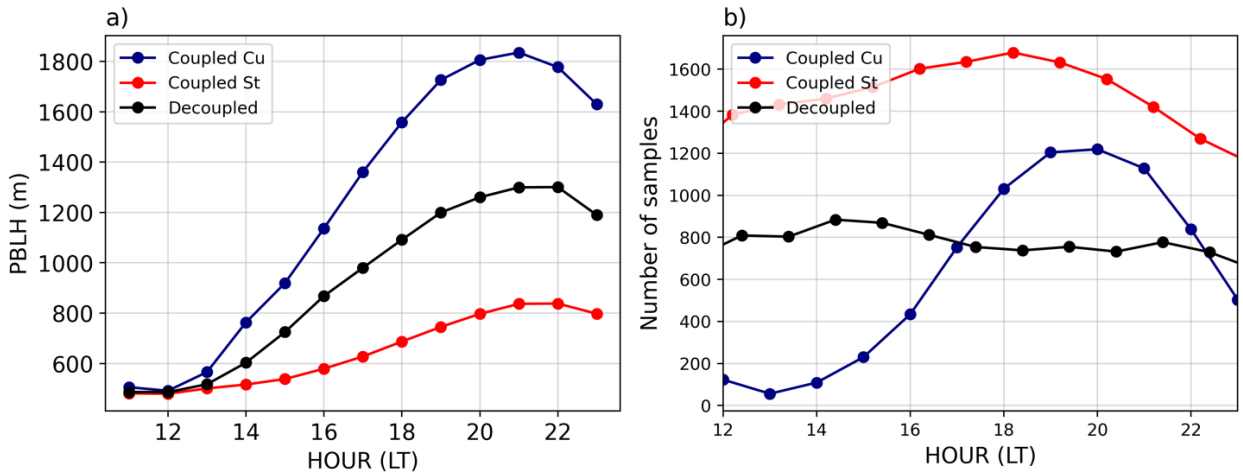

Figure S2 a) Hourly variation of the Planetary Boundary Layer Height (PBLH) for coupled cumulus (Coupled Cu), coupled stratiform (Coupled St), and decoupled regimes at the SGP site. b) Diurnal variability of the number of samples of Coupled Cu, Coupled St, and Decoupled clouds at the SGP.

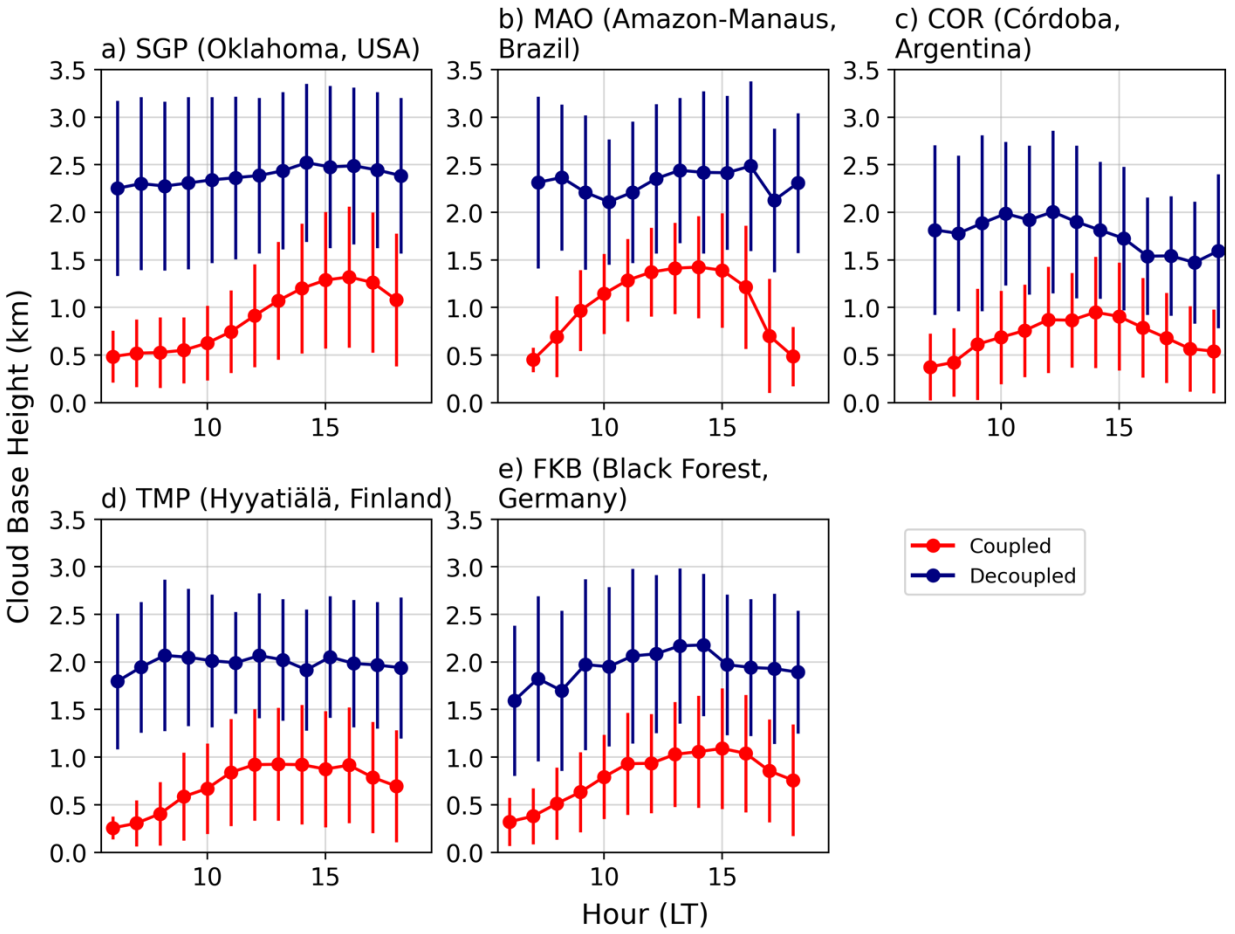

Figure S3 Hourly variation of the Cloud Base Height (PBLH) for coupled and decoupled regimes at the five ARM observatories. The red lines correspond to the coupled cases while the blue lines represent the decoupled cases.