Supplementary Material: Interannual variability of evapotranspiration and vegetation productivity

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Figure S1

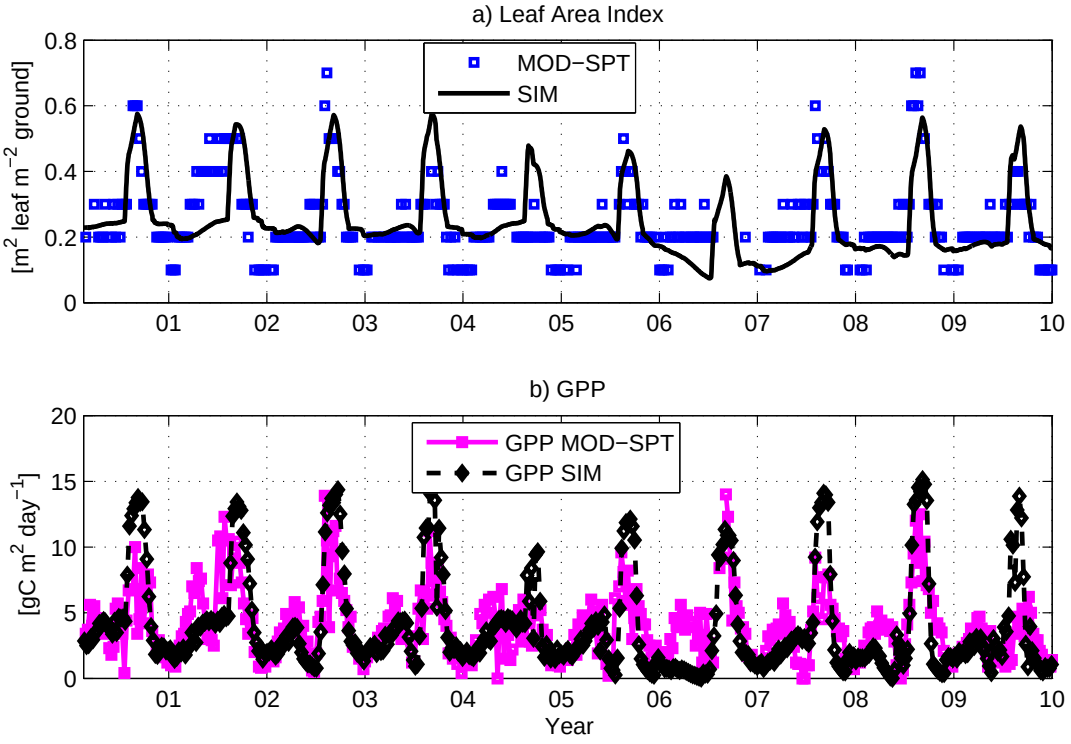

Figure 1: A comparison between the simulated series (SIM) and remote sensing observation for the Lucky Hills flux tower. (a.) Leaf Area Index, (b.) Gross Primary Production (GPP). "MOD-SPT" is a MODIS-based estimation of LAI and GPP in the pixel coinciding with the flux tower (1x1 $[km^2]$).

Figure S2

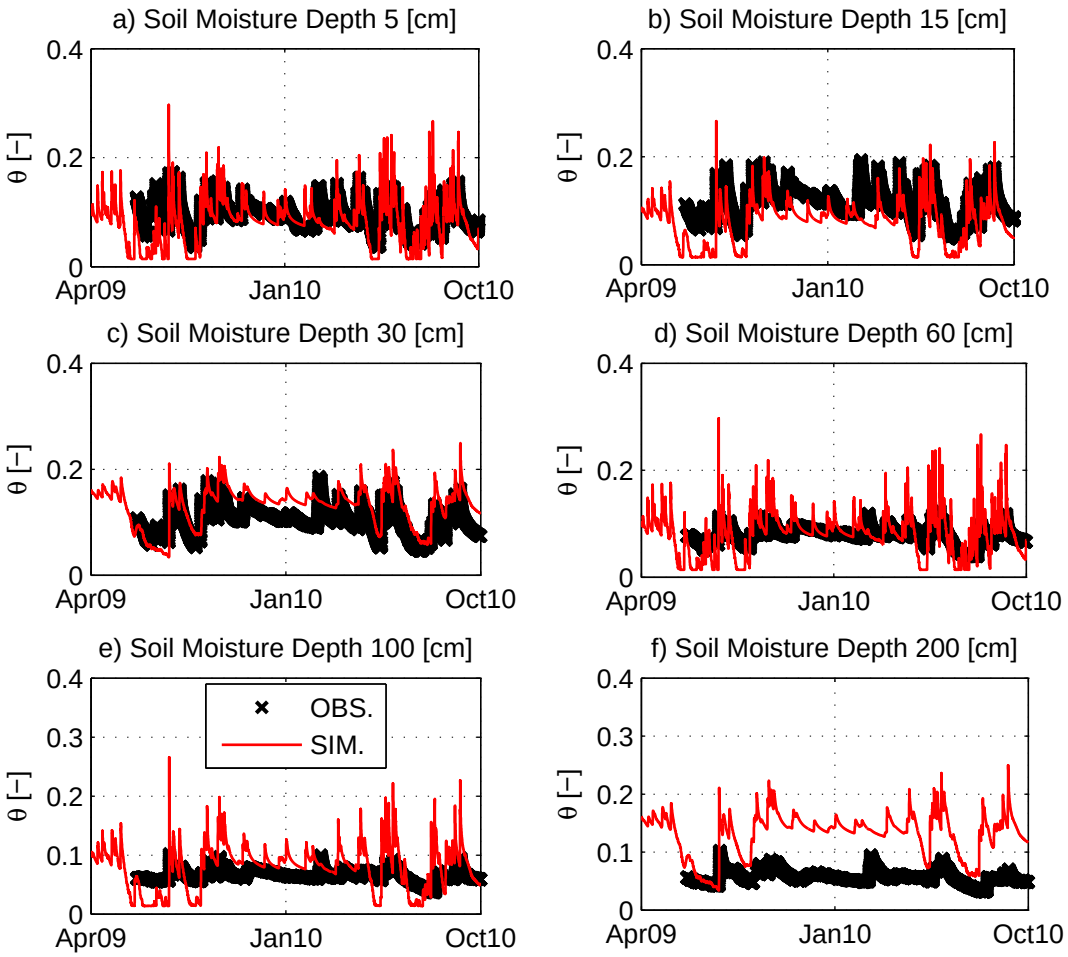

Figure 2: A comparison between the observed (OBS.) and simulated (SIM.) soil water content at different depths: (a) 5 cm, (b) 15 cm, (c) 30 cm, (d) 60 cm, (e) 100 cm, and (c) 200 cm measured in the footprint of the UMBS flux tower.

Figure S3

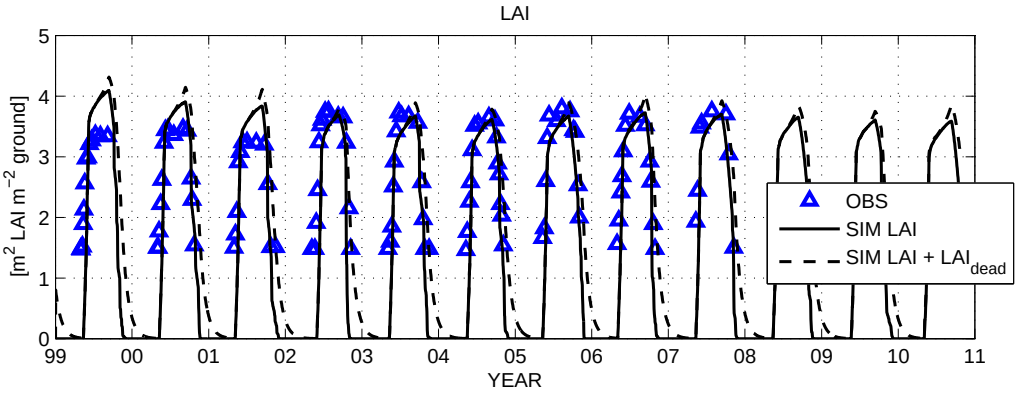

Figure 3: A comparison among the series of simulated green Leaf Area Index (SIM LAI), green plus dead Leaf Area Index (SIM $LAI + LAI_{dead}$), and ground observation of LAI (OBS) (Ameriflux database) for the area in the footprint of the UMBS flux tower.

Figure S4

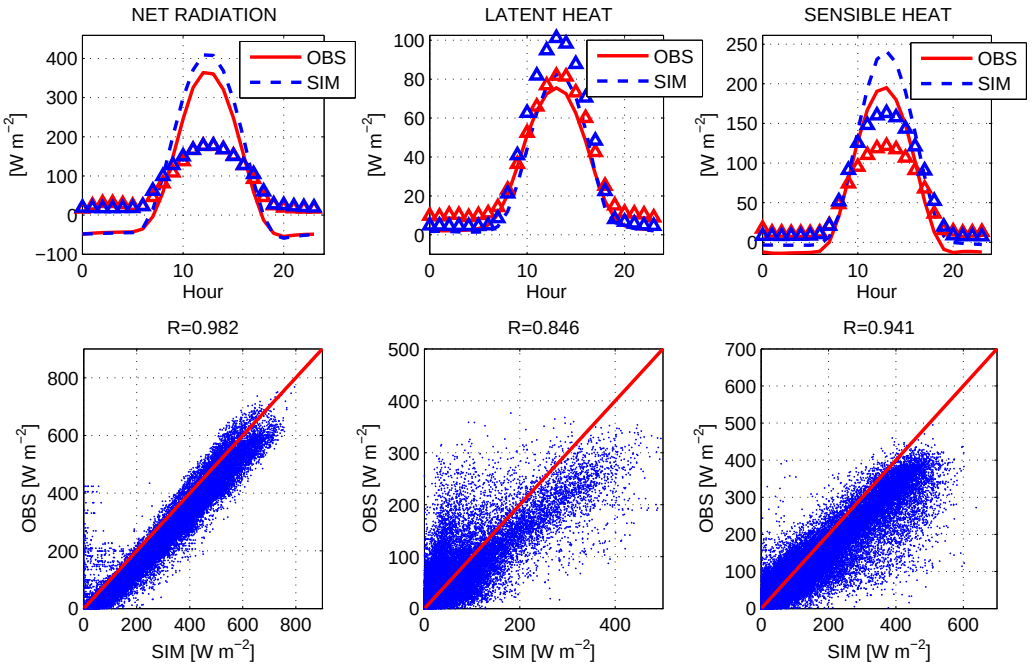

Figure 4: A comparison between the observed (OBS) and simulated (SIM) average daily cycles of net radiation, latent heat, and sensible heat for the location of Vaira ranch. The triangles represent the standard deviations. Scatter plots with the correlation coefficients R are also shown.

Figure S5

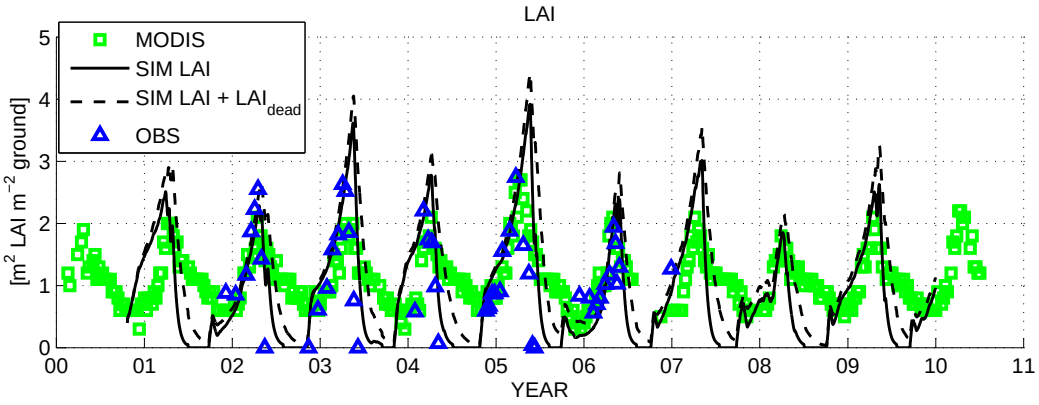

Figure 5: A comparison among the time series of simulated green Leaf Area Index (SIM LAI), green plus dead Leaf Area Index (SIM $LAI + LAI_{dead}$), remote sensing observation of LAI for the Vaira ranch (MODIS), and ground observations of LAI (OBS) (Ameriflux database). The MODIS-based estimate of LAI corresponds to the pixel coinciding with the flux tower (1x1 $[km^2]$).

Figure S6

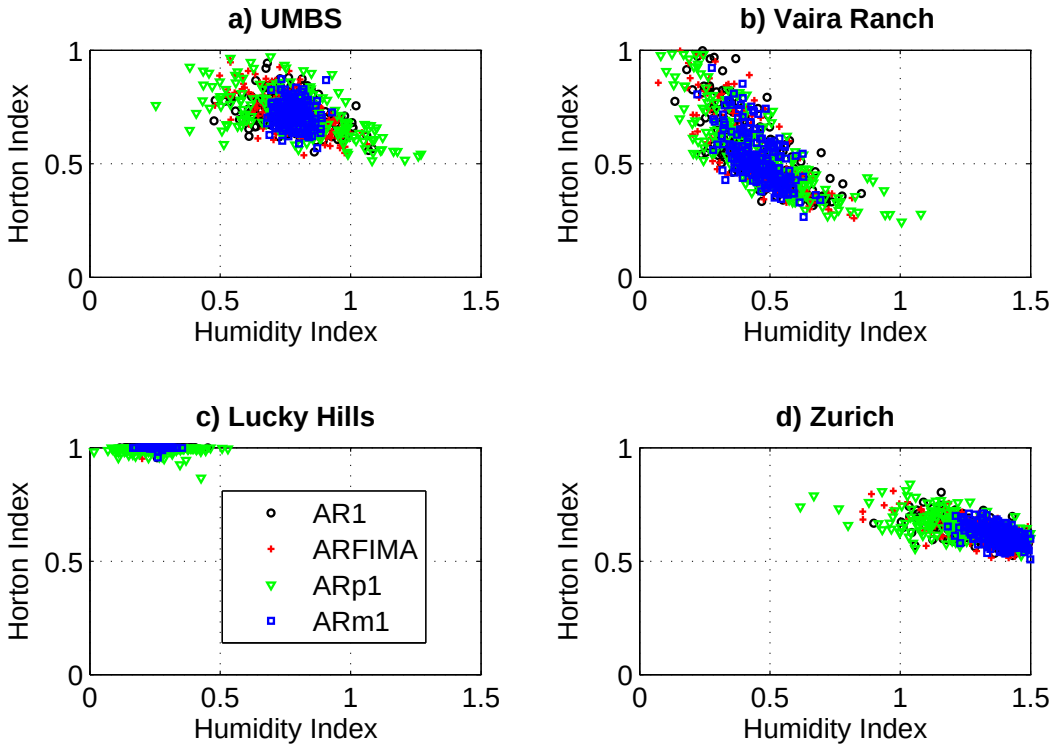

Figure 6: Scatter plots between the Horton Index, i.e., the ratio between total evapotranspiration and precipitation minus fast runoff, and the Humidity Index, i.e., the ratio between precipitation and potential evapotranspiration for the locations of (a) UMBS, (b) Vaira ranch, (c) Lucky Hills, and (d) Zurich. The different symbols and colors correspond to the four scenarios of interannual variability of precipitation.