

Figure S1 Response of daytime NEE observations (NEE_{obs}) to photosynthetic photon flux density (PPFD) during July and August

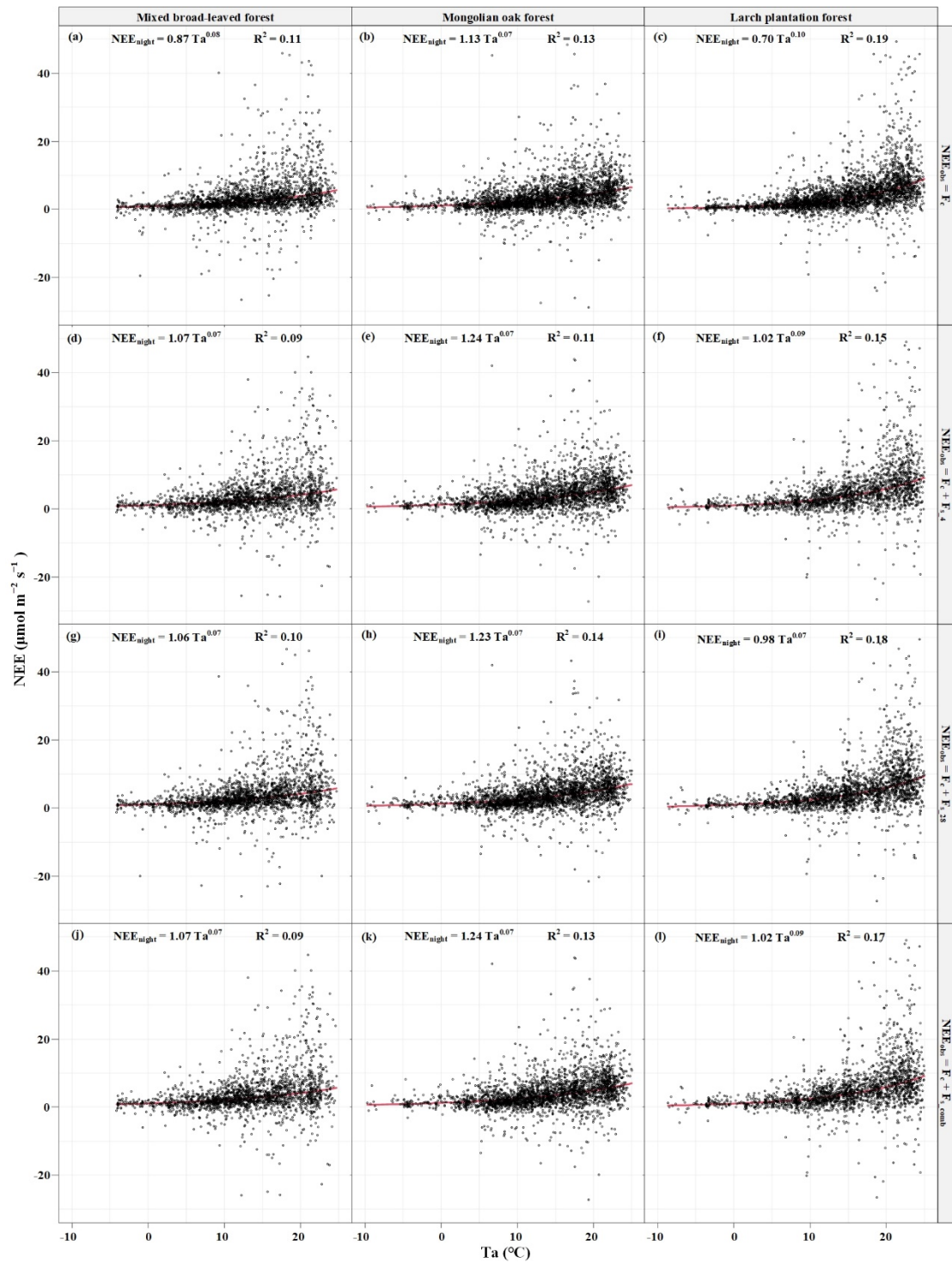


Figure S2 Response of nighttime NEE observations (NEE_{obs}) to air temperature (T_a) during the dormant season

The influences of F_s on the relationship between NEE observations and meteorological drivers, indicated the effect of uncertainty in F_s estimates on NEE observations. Our analysis showed that the correlations between NEE observations

derived from $F_c + F_s$ and both photosynthetic photon flux density (PPFD) and air temperature are lower compared to those obtained from F_c alone (Figure 1 and Figure 2 in the Supplementary Materials). Additionally, the estimated light saturated net CO₂ assimilation (A_{max}) is greater when NEE observations are estimated by $F_s + F_c$, as opposed to when NEE is estimated solely by F_c . This suggests that F_s significantly affects daytime NEE and can correct the estimation of A_{max} and related parameters. The relationship between NEE observations and PPFD is influenced by the size of averaging time window the F_s measurement. A larger averaging window results in less random uncertainty in the F_s estimation, thereby increasing the correlation between NEE observations and meteorological drivers, including PPFD and T_a .