

Supplemental Material

Table S1. Surviving rate after the quality controls of hourly fluxes

Quality control	CO ₂ flux	CH ₄ flux
Non-missing data	74.4%	74.4%
1. Significant slope	86.4%	80.9%
2. Stationarity	78.8%	71.5%
3. Initial concentration	95.0%	93.0%
4. Outlier removal	97.2%	95.2%
Total	55.1%	45.3%

Table S2. Average hourly CO₂ and CH₄ fluxes in daytime and nighttime in different levels of atmospheric turbulence. Values represent mean ± standard deviation (sample size).

Atmospheric turbulence	CO ₂ flux (μmol m ⁻² s ⁻¹)		CH ₄ flux (nmol m ⁻² s ⁻¹)	
	Daytime	Nighttime	Daytime	Nighttime
All	2.55 ± 5.31 (55304)	4.56 ± 9.02 (58334)	12.1 ± 29.1 (46801)	17.6 ± 35.6 (45531)
$u^* \leq 0.3 \text{ m s}^{-1}$	2.81 ± 6.15 (20339)	4.58 ± 9.05 (50460)	12.6 ± 27.8 (16051)	17.6 ± 36.2 (38973)
$u^* > 0.3 \text{ m s}^{-1}$	2.40 ± 4.74 (34965)	4.46 ± 8.82 (7874)	11.8 ± 29.8 (30750)	17.1 ± 31.8 (6558)