

Supplement

Based on the daytime half-hourly and daytime totals of turbulent energy fluxes, the energy balance ratio (E_{BR}) is calculated as Eq. (3),

$$E_{BR} = \frac{\sum(H + LE)}{\sum(R_n - G - S)} \quad (3)$$

where S is the latent and sensible heat storage in the air-column below the EC system and is calculated as in Eq. (4) (Dou et al., 2006),

$$S = \int_0^{hc} \rho c_p \frac{\partial T}{\partial t} dz + \int_0^{hc} \frac{\rho c_p}{\gamma} \frac{\partial e}{\partial t} dz \quad (4)$$

where hc is the height of eddy flux system measurement (32 m), T is air temperature in the air-column below hc , and e is water vapor pressure.

Table 2. Energy balance closure statistic using half-hourly and daytime totals during growing season from 2006 to 2009

	Daytime (half-hourly)				Daytime sum			
	2006	2007	2008	2009	2006	2007	2008	2009
Slope	0.92	0.87	0.92	0.82	1.07	0.91	1.04	0.84
Intercept	20.50	17.24	10.72	13.08	-0.63	-0.09	-0.79	-0.30
R^2	0.81	0.80	0.81	0.82	0.88	0.81	0.92	0.82

Daytime was defined as the period between the sunrise and sunset with $PAR > 4 \mu\text{mol m}^{-2} \text{s}^{-1}$;

The unit of Intercept for Half-hourly value and Daytime sum value were $\text{W} \cdot \text{m}^{-2}$ and $\text{MJ} \cdot \text{m}^{-2}$, respectively.