☺to Data provider ··············· To prevent incorrect usages of your data, fill the blanks closely.
Delete unnecessary column(s) and line(s).

1. About the data set

Site name (three letter code)	IRRI Flux Research Site (IRI)	
Period of registered data	1 January 2010 – 31 December 2010	
This document file name	FxMt_IRI-FL_2010_30m_01.pdf	
Corresponding data file name	FxMt_IRI-FL_2010_30m_01.csv	
Revision information		
Date	Details of revision	Renewed file name
16 May 2012	First registration	SiIn_IRI_2012_01.pdf FxMt_IRI-FL_2010_30m_01.pdf FxMt_IRI-FL_2010_30m_01.csv FxMt_IRI-FL_2010_01.csv
Contact person#1	Maricar Alberto (M.Alberto@irri.org)	

2. Site description

☺to Data provider ········· Please explain the site condition during the period of this dataset.
☻to DB user ··············· See also the general information file.

Hour line (Time difference from UTC)	8 hours ahead of UTC
Vegetation Type	Flooded rice
Canopy height	About 1 m
LAI	Max 7.9 m^2m^{-2} in the dry season; max 7.3 m^2m^{-2} in the wet season

3. Observation and calculation

☺to Data provider ··············· A list of references is shown in the last page. **Please fill-in the blanks as much as possible, or select the suitable option. If you are not sure what to write, leave it as a blank.**

3-1. Flux observation system and data acquisition

Type of sonic anemometer	CSAT3 sonic anemometer
Type of IRGA	LI7500 open path CO_2/H_2O gas analyzer
Sampling rate	10 Hz
Averaging time	30 min
Flux measurement height #1	2.25 m
Calibration information	Open-path CO_2/H_2O analyzer was calibrated every 6 months with standard CO_2 gases and a dew point generator (LI610, LI-COR,USA)

3-2. Flux calculation

		Note/References
Coordinate rotation [*1-3]	✓ Double (2D) rotation	Information from LI-COR
Lag removal [*2, 7, 8]	✓ Constant	Information from LI-COR

3-3. Flux corrections

		Note/References
For sensible heat flux	✓ Cross wind correction [*9, 10] ✓ Water vapor correction [*11]	Information from LI-COR
Low frequency loss [*16] (Detrending)	✓ Block averaging	Information from LI-COR
WPL Correction[*17-21]	✓ For latent heat (LE) flux ✓ For CO_2 flux	Information from LI-COR
Others [*22-24]	✓ Temperature dependency for latent heat: L ✓ Humidity dependency for specific heat: Cp ✓ Temperature dependency for air density ✓ Pressure dependency for air density	Information from LI-COR

3-4. Quality control [*25-26]

		Note/References
Raw data test	✓ Spike test [*27] ✓ Absolute limits ✓ Higher-moment statistics ✓ Resolution test ✓ Dropout test	Information from LI-COR

Non steady state test	✓ YES	Foken and Wichura, 1996
Integral turbulence characteristics	✓ YES	Kaimal and Finnigan (1994); Ohtaki 1985)
Footprint test *28, 29	✓ YES	Schuepp et al., 1990
Absolute thresholds	✓ YES	Information from LI-COR

3-5. Storage term

		Note/References
Storage term	✓ Not applied	

3-6. Other information

☺ to Data provider ······················ If your flux data were evaluated by gradient method, please explain the observation method here.

		Note/References

4. Registered Data

Observation items	Symbol	Unit	Height(s) Depth(s)	Instruments	Level of data processing
Year	Year	2010 (YYYY)	****	****	
Date	DOY	1～365	****	****	
Time	TIME	0030 (HHMM)	****	****	
CO_2 flux	Fc	micoromol・m^{-2}・s^{-1}	2.25 m	CSAT3 & LI7500	Quality-controlled
CO_2 storage in canopy air layer	Sc	micoromol・m^{-2}・s^{-1}	NA	NA	NA
Net ecosystem carbon exchange	NEE	micoromol・m^{-2}・s^{-1}	2.25 m	Fc	Quality-controlled
Sensible heat flux	H	W・m^{-2}	2.25 m	CSAT3 & LI7500	Quality-controlled
Latent heat flux	LE	W・m^{-2}	2.25 m	CSAT3 & LI7500	Quality-controlled
Friction velocity	USt	m・s^{-1}	2.25 m	CSAT3	Quality-controlled
Global solar radiation (incoming)	Rg_1	W・m^{-2}	2.25 m	LI-200S (Pyranometer)	Quality-controlled
Global solar radiation (incoming)	Rg	W・m^{-2}	2.25 m	NR01 (Net radiometer)	Quality-controlled
Global solar radiation (outgoing)	Rg_out	W・m^{-2}	2.25 m	NR01 (Net radiometer)	Quality-controlled
Long-wave radiation (incoming)	Rgl	W・m^{-2}	2.25 m	NR01 (Net radiometer)	Quality-controlled
Long-wave radiation (outgoing)	Rgl_out	W・m^{-2}	2.25 m	NR01 (Net radiometer)	Quality-controlled
Photosynthetic active photon flux density	PPFD	micoromol・m^{-2}・s^{-1}	2.25 m	LI-190S (Quantum sensor)	Quality-controlled
Wind speed	WS	m・s^{-1}	2.25 m	CSAT3	Quality-controlled
Air temperature	Ta	degrees C	2.25 m	HMP45C (Vaisala)	Quality-controlled
Relative humidity	Rh	%	2.25 m	HMP45C (Vaisala)	Quality-controlled
Soil temperature	Ts	degrees C	5 cm (below the soil)	Type T thermocouple	Quality-controlled
Water temperature	Tw	degrees C	2.5 cm (above the soil)	Type T thermocouple	Quality-controlled
Leaf area index	LAI	m^2 m^{-2}	Green leaves	LI-3100C (Leaf area meter)	Quality-controlled
Canopy height (Vegetation height)	HEIGHTC (HEIGHTV)	m	Plant height	Steel rule	Quality-controlled

5. Note for data users

☺to Data provider ················ If you use some tags (flags/identifiers) to identify the levels of data processing, please explain the meanings of the tags.

6. Important events

☺to Data provider················ Please list noteworthy events during the observation period. For example, relocation of the instruments, reasons for missing observation, dates of sowing and harvesting at agricultural site should be listed in the table by date.

Date	Events
2010	11 tropical cyclones entered the Philippine Area of Responsibility
Jan-Apr 2010	El Niño event
July-Dec 2010	La Niña event
29 Dec 2009	Planting date for the dry season
12 April 2010	Harvest date for the dry season
15 June 2010	Planting date for the wet season
13 Oct 2010	Harvest date for the wet season
IMPORTANT	Since we only have one eddy covariance system (ECS) and we are monitoring two study sites (flooded and non-flooded rice fields), we had to move the ECS from one location to the other every week; so, we only collected flux data every other week.

References

Flux calculation

*1 McMillen, R.T., 1988. Boundary-Layer Meteorology, 43: 231-245.

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*3 Wilczak. J.M., Oncley, S.P. and Stage, S.A., 2001. Boundary-Layer Meteorology, 99: 127-150.

*4 Wyngaard, J. C. and Zhang, S. F., 1985. J. Atmos. Oceanic Tech., 2: 548-558.

*5 Kaimal, J.C. et al., 1990. Boundary-Layer Meteorol., 53: 103-115.

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*7 Leuning, R. and Judd M.J., 1996.Global Change Biology, 2: 241-254.

*8 Information from Li-Cor

Flux correction

*9 Schotanus, P. et al., 1983. Boundary-Layer Meteorology, 26: 81-93.

*10 Liu, H., Peters, G. and Foken, T., 2001. Boundary-Layer Meteorology, 100: 459-468.

*11 Kaimal J.C. and Gaynor, J.E., 1991. Boundary-Layer Meteorology, 56: 401-410.

*12 Watanabe et al., 2000. Boundary-Layer meteorol. 96, 743-491.

*13 Massman, W. J., 2000. Agric. For. Meteorol. 104, 185-198

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*17 Webb, E. K., Pearman, G.I. and Leuning, R., 1980. Quarterly Journal of the Royal Meteorological Society, 106: 85-100.

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*21 Massman, W. 2004. Concerning the measurement of atmospheric tarce gas fluxes with open- and closed-path eddy covariance system: The WPL terms and spectral attenuation. In: X. Lee (Editor), Handbook of Micrometeorology: A guide for surface Flux Measurements. Kluwer, Dirdrecht, pp. 133-160.

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*23 Stull, R.B., 1988. An Introduction to Boundary Layer meteorology. Kluwer Acad. Publ., Dordrecht, Boston, London, 666pp.

*24 Cohen, E. R. and Taylor, B. N., 1986. The 1986 adjustment of the fundamental physical constants. Internatinal Counsil of Scientific Unions (ICSU), Committee on Data for Science and Technology (CODATA). CODATA-Bulletin, No. 63: 36pp.

Quality control

*25 Vickers, D. and Mahrt, L., 1997. Journal of Atmospheric and Oceanic Technology, 14: 512-526.

*26 Foken, T. and Wichura, B., 1996. Agricultural and Forest Meteorology, 78: 83-105.

*27 Hojstrup, J., 1993. Measuring Science Technology, 4: 153-157.

*28 Schmid, H. P., 1994. Boundary-Layer Meteorology, 67: 293-318.

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