

TITLE:

CEOP_Tsukuba_NIAES-MASE_20070101_20070630.stm

CONTACT(S):

1) Akira Miyata

National Institute for Agro-Environmental Sciences

Tsukuba 305-8604, Japan

E-mail: amiyat@niaes.affrc.go.jp

2) Masayoshi Mano

National Institute for Agro-Environmental Sciences

Tsukuba 305-8604, Japan

E-mail: mmano@niaes.affrc.go.jp

DATE OF THIS DOCUMENT:

1 October 2007

1. 0 DATASET OVERVIEW:**1.1 Introduction:**

Mase paddy flux site was established in 1999 to monitor greenhouse gas exchange between paddy fields and the atmosphere, and since then, Mase site is operated as one of the key study sites of AsiaFlux (<http://www.asiaflux.net/>). Details of the study site and instrumentation are given in some references (Saito *et al.*, 2005; Miyata *et al.*, 2005; Han *et al.*, 2007; Saito *et al.*, 2007).

1.2 Time period covered by the data:

Start: 1 January 2007, 00:30 (UTC)

End: 1 July 2007, 00:00 (UTC)

1.3 Physical location of the measurement:

Latitude: 36° 03' 14.3" N

Longitude: 140° 01' 36.9" E

Elevation: 11 m a.s.l.

Landscape: Agricultural fields (paddy fields)

Soil characteristics: Soil type is Eutric Fluvisols. The site is flooded most of rice growing season (from the beginning of May to mid-September).

1.4 Data source:

Original data.

1.5 WWW address references:

http://www.asiaflux.net/network/007MSE_1.html

http://ecomdb.niaes.affrc.go.jp/e_level_page.php?select_area=1045&select_site=1121

2.0 INSTRUMENTATION DESCRIPTION:**2.1 Platform:**

Sensors are set around a 6-m tall mast on which meteorological sensors are mounted.

2.2 Description of the instrumentation:

Parameter	Model	Manufacturer
Soil Temperature	-	Home-made
Soil Temperature	-	Home-made
Soil Temperature	-	Home-made
Soil Temperature	-	Home-made
Soil Temperature	-	Home-made
Soil Moisture	TDR100	Campbell, Logan, UT, USA
Soil Moisture	TDR100	Campbell, Logan, UT, USA
Soil Moisture	TDR100	Campbell, Logan, UT, USA
Soil Moisture	TDR100	Campbell, Logan, UT, USA
Soil Moisture	TDR100	Campbell, Logan, UT, USA

2.3 Instrumentation specification:

Parameter	Sensor Type	Depth of sensor (m)	Accuracy	Resolution
Soil Temperature	T-type thermocouple	0.01	-	-
Soil Temperature	T-type thermocouple	0.05	-	-
Soil Temperature	T-type thermocouple	0.10	-	-
Soil Temperature	T-type thermocouple	0.20	-	-
Soil Temperature	T-type thermocouple	0.40	-	-
Soil Moisture	Time domain reflectometry	0.02 (0.025) *	-	-
Soil Moisture	Time domain reflectometry	0.03 (from surface to 0.05)**	-	-
Soil Moisture	Time domain reflectometry	0.05 (from surface to 0.10)**	-	-
Soil Moisture	Time domain reflectometry	0.10 (from surface to 0.20)**	-	-
Soil Moisture	Time domain reflectometry	0.15 (from surface to 0.30)**	-	-

* The sensor was set horizontally in the soil at 2.5 cm depth.

** The sensors were set obliquely in the soil.

3.0 DATA COLLECTION AND PROCESSING:

3.1 Description of data collection:

Data are retrieved weekly.

3.2 Description of derived parameters and processing techniques used:

- 1) Soil temperature data were sampled every 5 seconds and their 30-minute averages were stored.
- 2) Soil moisture data were sampled every 5 minutes and their 30-minute averages were stored.

4.0 QUALITY CONTROL PROCEDURES:

At this stage of data processing, only apparently erroneous data were removed. Further quality control the data will be done later.

5.0 GAP FILLING PROCEDURES:

At this stage of data processing, no gap filling procedure was applied. Gap filling will be done later.

6.0 DATA REMARKS:

6.1 PI's assessment of the data:

6.1.1 Instruments problems

None.

6.1.2 Quality issues

6.2 Missing data periods:

2007/01/26 07:00-2007/02/02 02:00 (Soil Temperature, 0.01 m)
2007/02/02 02:30-2007/02/09 04:30 (Soil Temperature, all depths)
2007/02/20 05:30-2007/03/01 06:00 (Soil Moisture, all depths)
2007/03/01 06:30-2007/03/30 05:00 (Soil Moisture, 0.03m, 0.05m, 0.10m, 0.15m)
2007/03/25 17:30 (Soil Moisture, 0.02m)
2007/03/23 18:30-2007/03/23 19:30 (Soil Moisture, 0.02m)
2007/03/23 20:30-2007/03/23 23:00 (Soil Moisture, 0.02m)
2007/03/24 04:00-2007/03/30 05:00 (Soil Moisture, 0.02m)
2007/04/06 16:00-2007/04/06 17:30 (Soil Moisture, 0.02m)
2007/04/06 19:00-2007/04/06 19:30 (Soil Moisture, 0.02m)
2007/04/06 23:00-2007/04/06 23:30 (Soil Moisture, 0.02m)
2007/04/09 01:30-2007/04/09 02:00 (Soil Moisture, 0.02m)
2007/04/09 07:30 (Soil Moisture, 0.02m)
2007/04/09 14:30-2007/04/09 15:00 (Soil Moisture, 0.02m)
2007/04/10 01:00-2007/04/10 01:30 (Soil Moisture, 0.02m)
2007/04/10 02:30-2007/04/10 03:00 (Soil Moisture, 0.02m)
2007/04/10 06:30-2007/04/10 07:30 (Soil Moisture, 0.02m)
2007/04/10 09:00-2007/04/10 11:00 (Soil Moisture, 0.02m)
2007/04/19 04:00-2007/04/10 06:00 (Soil Moisture, all depths)
2007/04/25 06:00 (Soil Moisture, 0.05m)
2007/04/25 06:30-2007/04/28 08:30 (Soil Moisture, all depths)
2007/04/25 07:30-2007/04/26 08:00 (Soil Temperature, 0.01 m, 0.05 m, 0.10 m)
2007/04/26 09:00-2007/04/26 12:00 (Soil Temperature, all depths)
2007/04/26 20:00-2007/04/27 15:30 (Soil Temperature, all depths)
2007/04/27 17:30-2007/04/30 05:30 (Soil Temperature, all depths)
2007/04/30 06:30-2007/04/30 09:00 (Soil Moisture, all depths)
2007/04/30 09:30-2007/05/03 09:00 (Soil Moisture, 0.03m, 0.05m, 0.10m, 0.15m)

6.3 Data intercomparisons:

7.0 REFERENCE REQUIREMENTS:

Original data were collected in the framework of Research Project for Global Warming Monitoring by NIAES. The project is funded by Ministry of Agriculture, Forestry and Fisheries, Ministry of Environment and NIAES.

8.0 REFERENCES

Saito, M, A. Miyata, H. Nagai, and T. Yamada, Seasonal variation of carbon dioxide exchange in rice paddy field in Japan. Agric. Forest Meteorol. 135, 93-109, 2005.

- Miyata, A., T. Iwata, H. Nagai, T. Yamada, H. Yoshikoshi, M. Mano, K. Ono, G. H. Han, Y. Harazono, E. Ohtaki, Md. A. Baten, S. Inohara, T. Takimoto, and M. Saito, Seasonal variation of carbon dioxide and methane fluxes at single cropping paddy fields in central and western Japan, *Phyton*, 45(4), 89-97, 2005.
- Saito, M., J. Asanuma, A. Miyata, Dual-scale transport of sensible heat and water vapor over a short canopy under unstable conditions. *Water Resources Research*, 43, W05413, doi:10.1029/2006WR005136, 2007.
- Han, G.H., H. Yoshikoshi, H. Nagai, T. Yamada, K. Ono, M. Mano, A. Miyata, Isotopic disequilibrium between carbon assimilated and respired in a rice paddy as influenced by methanogenesis from CO₂. *Journal of Geophysical Research*, 112, G02016, doi:10.1029/2006JG000219, 2007.