

**TITLE:**

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**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 July 2008, 00:00 (UTC)

End: 31 December 2008, 23:30 (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. Measurement site was not moved, but elevation data was updated.

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

[http://ecomdb.niaes.affrc.go.jp/e\\_level\\_page.php?select\\_area=1045&select\\_site=1121](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 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       | 0.02 (0.025) <sup>1</sup>                  | -        | -          |
| 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) <sup>2</sup>                  | -        | -          |
| Soil Moisture    | Time domain reflectometry | 0.03 (from surface to 0.05) <sup>3</sup>   | -        | -          |
| Soil Moisture    | Time domain reflectometry | 0.05 (from surface to 0.10) <sup>3,4</sup> | -        | -          |
| Soil Moisture    | Time domain reflectometry | 0.10 (from surface to 0.20) <sup>3</sup>   | -        | -          |
| Soil Moisture    | Time domain reflectometry | 0.15 (from surface to 0.30) <sup>3</sup>   | -        | -          |

<sup>1</sup> Measurement was started at 2008/05/05 05:30 UTC.

<sup>2</sup> The sensor was set horizontally in the soil at 2.5 cm depth.

<sup>3</sup> The sensor was set obliquely in the soil.

<sup>4</sup> Depth of sensor was changed at 2008/05/05 07:30:00 UTC to 0.05 (from surface to 0.08).

## 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:

from 2008/01/01 00:00 to 2008/04/02 08:30 (UTC) (Soil Temperature 0.02m, 0.1m)  
from 2008/01/01 00:00 to 2008/02/03 23:00 (UTC) (Soil Temperature 0.4m)  
from 2008/02/04 00:00 to 2008/02/04 10:00 (UTC) (Soil Temperature 0.4m)  
from 2008/02/04 13:30 to 2008/02/04 15:00 (UTC) (Soil Temperature 0.4m)  
from 2008/02/04 19:00 to 2008/02/05 01:00 (UTC) (Soil Temperature 0.4m)  
from 2008/02/05 03:00 to 2008/02/05 21:30 (UTC) (Soil Temperature 0.4m)  
from 2008/02/05 23:00 to 2008/02/06 09:30 (UTC) (Soil Temperature 0.4m)  
from 2008/02/06 11:00 to 2008/02/07 00:30 (UTC) (Soil Temperature 0.4m)  
from 2008/02/07 15:00 to 2008/02/07 21:00 (UTC) (Soil Temperature 0.4m)  
from 2008/02/08 12:00 to 2008/02/08 19:30 (UTC) (Soil Temperature 0.4m)  
2008/02/08 20:30 (UTC) (Soil Temperature 0.4m)  
2008/02/08 21:30 (UTC) (Soil Temperature 0.4m)  
from 2008/02/09 09:00 to 2008/03/04 04:30 (UTC) (Soil Temperature 0.4m)  
from 2008/03/04 05:00 to 2008/03/07 08:00 (UTC) (Soil Temperature 0.01m, 0.05m, 0.4m)  
2008/03/04 05:00 (UTC) (Soil Moisture all depth)  
from 2008/03/07 04:30 to 2008/03/07 06:30 (UTC) (Soil Moisture all depth)  
from 2008/03/07 08:30 to 2008/04/02 08:30 (UTC) (Soil Temperature 0.4m)  
2008/04/02 09:00 (UTC) (Soil Moisture all 0.02m)  
from 2008/04/02 09:30 to 2008/05/05 07:00 (UTC) (Soil Moisture all depth)  
from 2008/04/02 18:00 to 2008/05/05 05:00 (UTC) (Soil Temperature all depth)  
from 2008/05/05 07:30 to 2008/06/30 23:30 (UTC) (Soil Moisture 0.15m)  
from 2008/05/12 07:00 to 2008/05/12 08:30 (UTC) (Soil Temperature all depth)  
2008/05/22 11:00 (UTC) (Soil Moisture 0.1m)

### 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.

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- 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.
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