## TITLE

CAMP_Tibet_BJ-SAWS3_20021001_20030331.stm

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## DATE OF THIS DOCUMENT

02 Sep. 2004

## 1. 0 DATASET OVERVIEW

### 1.1 Introduction

To clarify the energy and water cycle in the Tibetan Plateau, it is important to understand the characteristics of the basic meteorological elements and surface fluxes.

The purpose of Tibet AWS (Automatic Weather Station) observation is to improve the quantitative understanding of land-atmosphere interactions over the Tibetan Plateau and develop the land surface process models by monitoring these meteorological values.

1.2 Time period covered by the data

Start: 1 October 2002, 00:00
End: 31 March 2003, 23:00

1.3 Temporal characteristics of the data

All parameters are recoded every hour.

1.4 Physical location of the measurement

Latitude : 31.37137 N
Longitude : 91.90236 E
Elevation : 4509.2 m a.s.l.
Landscape : Grassland
Canopy height : 10 ~ 20cm.
Soil Characteristics: Sand

1.5 Data source

1.6 Website address references

http://monsoon.t.u-tokyo.ac.jp/camp/tibets/

## 2.0 INSTRUMENTATION DESCRIPTION

2.1 Platform

Three Small AWS systems are constructed in June 2002 to represent the local scale (100m ~ 1km) heterogeneity of the surface condition to measure surface and soil temperature, soil moisture and heat flux. The wind speed and direction are only measured as the meteorological element in this system. This S-AWS (No.3) is located about 460 m northeast from main AWS of BJ site. A small river (less than 1 m in width and depth) runs nearby and the surface condition of this site is solely wet. The sensors are mounted on several heights.

2.2 Description of the instrumentation

| Parameter | Model | Manufacturer |
|---|---|---|
| Soil Temperature | WST80-L5 | AGEMATSU |
| Soil Moisture | Trime IT | IMKO |

2.3 Instrumentation specification

Soil Temp_5cm : Soil Temperature at the 5cm depth (deg.C)
Soil Temp_10cm : Soil Temperature at the 10cm depth (deg.C)
Soil Moist_3cm : Averaged Soil Moisture between 0cm and 5cm depth (%)
Soil Moist_5cm : Averaged Soil Moisture between 0cm and 10cm depth (%)

## 3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original data are sampled at every 5 seconds (0.2Hz) and 10-minute average (except soil moisture, sampled at every 10 minutes) is computed and stored in a data logger (Campbell CR-10X).
Data are downloaded from the Tower twice every year, in spring and summer. Then, data are sent to Japan, where they are processed.

3.2 Description of derived parameters and processing techniques used

Soil temperature is averaged over the previous hour.
Soil Moisture instantaneous values of each 1 hour.

## 4.0 QUALITY CONTROL PROCEDURES

For all parameters, the data has been visually checked, looking for extremely and unusual low/high values and/or periods with constant values thorough the CAMP Quality Control Web Interface.
The quality control flags follow the CEOP data flag definition document.

## 5.0 GAP FILLING PROCEDURES

No gap filling procedure was applied.

## 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

None

## 7.0 REFERENCE REQUIREMENTS

Original data was collected and is provided within the framework of GAME/CAMP Tibet Scientific and Technological Research Project, funded by the Ministry of Education, Culture, Sports, Science and Technology; the Japan Science and Technology Agency; the Frontier Research System for Global Change; the Japan Aerospace Exploration Agency; the Chinese Academy of Sciences; and the Chinese Academy of Meteorological Sciences.

## 8.0 REFERENCES

H. Ishikawa and GAME-Tibet Boundary Layer Group, 2001: What has been known and what has not in GAME/Tibet BL observation, Proceedings of the Fifth International Study Conference on GEWEX in Asia and GAME, 691.

Ma, Yaoming, O. Tsukamoto， H. Ishikawa, Z. Su, M. Menenti, J. Wang and J. Wen, 2002: Determination of regional land surface heat flux densities over heterogeneous landscape of HEIFE integrating satellite remote sensing with field observations, Jour. MeteoroI. Soc. Japan, 80(3), 485-501.

K. Tanaka, I. Tamagawa, H. Ishikawa, Y. Ma and Z. Hu, 2003: Surface energy and closure of the eastern Tibetan Plateau during the GAME-Tibet IOP 1998, J. Hydrology, vol. 283, pp. 169-183

K. Tanaka and H. Ishikawa, 2001: Long term monitoring of surface energy fluxes of the Amdo PBL site in the eastern Tibetan Plateau, Proceedings of the Fifth International Study Conference on GEWEX in Asia and GAME, 384-388.

Ueno, K., H. Fujii, H. Yamada and L. Liu, （2001） Weak and Frequent Monsoon Precipitation over the Tibetan Plateau. J. Meteor. Soc. Japan, 79, 1B, 419-434.

**TITLE**

CAMP_Tibet_BJ-SAWS3_20030401_20030930.stm

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**DATE OF THIS DOCUMENT**

19 Apr. 2006
(Updated 31 August 2006)
(Updated 06 October. 2006)

**1. 0 DATASET OVERVIEW**

1.7 Introduction

To clarify the energy and water cycle in the Tibetan Plateau, it is important to understand the characteristics of the basic meteorological elements and surface fluxes.

The purpose of Tibet AWS (Automatic Weather Station) observation is to improve the quantitative understanding of land-atmosphere interactions over the Tibetan Plateau and develop the land surface process models by monitoring these meteorological values.

1.8 Time period covered by the data

Start: 1 October 2002, 00:00
End: 30 September 2003, 23:00

1.9 Temporal characteristics of the data

All parameters are recoded every hour.

1.10 Physical location of the measurement

Latitude : 31.37137 N
Longitude : 91.90236 E
Elevation : 4509.2 m a.s.l.
Landscape : Grassland
Canopy height : 10 ~ 20cm.
Soil Characteristics: Sand

1.11 Data source

1.12 Website address references

http://monsoon.t.u-tokyo.ac.jp/camp/tibets/

**2.0 INSTRUMENTATION DESCRIPTION**

2.1 Platform

Three Small AWS systems are constructed in June 2002 to represent the local scale (100m ~ 1km) heterogeneity of the surface condition to measure surface and soil temperature, soil moisture and heat flux. The wind speed and direction are only measured as the meteorological element in this system. This S-AWS (No.3) is located about 460 m northeast from main AWS of BJ site. A small river (less than 1 m in width and depth) runs nearby and the surface condition of this site is solely wet. The sensors are mounted on several heights.

2.2 Description of the instrumentation

| Parameter | Model | Manufacturer |
|---|---|---|
| Soil Temperature | WST80-L5 | AGEMATSU |
| Soil Moisture | Trime IT | IMKO |

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Soil Temp_5cm : Soil Temperature at the 5cm depth (deg.C)
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Soil Moist_5cm : Averaged Soil Moisture between 0cm and 10cm depth (%)

**3.0 DATA COLLECTION AND PROCESSING**

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Data are downloaded from the Tower twice every year, in spring and summer. Then, data are sent to Japan, where they are processed.

3.2 Description of derived parameters and processing techniques used

Soil temperature is averaged over the previous hour.
Soil Moisture instantaneous values of each 1 hour.

## 4.0 QUALITY CONTROL PROCEDURES

For all parameters, the data has been visually checked, looking for extremely and unusual low/high values and/or periods with constant values thorough the CAMP Quality Control Web Interface.
The quality control flags follow the CEOP data flag definition document.

## 5.0 GAP FILLING PROCEDURES

No gap filling procedure was applied.

## 6.0 DATA REMARKS

6.1 PI's assessment of the data

6.1.1 Instruments problems

None.

6.1.2 Quality issues

The soil moisture values at both the -0.03 and -0.05 m heights look quite high and quite variable during about 20 June to 20 July. But this is reasonable phenomenon. BJ-SAWS3 station is different from the other BJ-SAWS stations. When the surface is covered with high and dense indigen vegetation, the sensor measures the grass root zone's soil moisture. The soil moisture around the 70 to 80% is reasonable, but when the soil moisture value is more than 80%, then we put “D”.

6.2 Missing data periods

Please see the chapter 9.0.

## 7.0 REFERENCE REQUIREMENTS

Original data was collected and is provided within the framework of GAME/CAMP Tibet Scientific and Technological Research Project, funded by the Ministry of Education, Culture, Sports, Science and Technology; the Japan Science and Technology Agency; the Frontier Research System for Global Change; the Japan Aerospace Exploration Agency; the Chinese Academy of Sciences; and the Chinese Academy of Meteorological Sciences.

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Ma, Yaoming, O. Tsukamoto，H. Ishikawa, Z. Su, M. Menenti, J. Wang and J. Wen, 2002: Determination of regional land surface heat flux densities over heterogeneous landscape of HEIFE integrating satellite remote sensing with field observations, Jour. Meteorol. Soc. Japan, 80(3), 485-501.

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Ueno, K., H. Fujii, H. Yamada and L. Liu, （2001） Weak and Frequent Monsoon Precipitation over the Tibetan Plateau. J. Meteor. Soc. Japan, 79, 1B, 419-434.

## 9.0 Missing data periods

Soil Temperature (-0.10m)
2003/07/04 19:00 - 2003/07/08 06:00 (84)

Soil Temperature (-0.05m)

Soil Moisture (-0.05m)
2003/07/04 19:00 - 2003/07/08 06:00 (84)

Soil Moisture (-0.03m)
2003/07/04 19:00 - 2003/07/08 06:00 (84)

## TITLE

CAMP_Tibet_BJ-SAWS3_20031001_20041231.stm

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## DATE OF THIS DOCUMENT

7 July. 2006
( Updated 31 October 2006)

## 1. 0 DATASET OVERVIEW

### 1.13 Introduction

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### 1.14 Time period covered by the data

Start: 1 October 2003, 00:00
End: 31 December 2004, 23:00

1.15 Temporal characteristics of the data

All parameters are recoded every hour.

1.16 Physical location of the measurement

Latitude : 31.37137 N
Longitude : 91.90236 E
Elevation : 4509.2 m a.s.l.
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1.17 Data source

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The quality control flags follow the CEOP data flag definition document.

## 5.0 GAP FILLING PROCEDURES

No gap filling procedure was applied.

## 6.0 DATA REMARKS

6.1 PI's assessment of the data

6.1.1 Instruments problems

None.

6.1.2 Quality issues

The soil moisture at the -0.05 m height makes a sudden jump at "2004/04/25 05:00". After the 2004/04/25 05:00, these data were almost always higher than the soil moisture at the -0.03 m height. But the reason is still not be sure. Then the Quality control flag was put "D".

6.2 Missing data periods

Please see the chapter 9.0.

## 7.0 REFERENCE REQUIREMENTS

Original data was collected and is provided within the framework of GAME/CAMP Tibet Scientific and Technological Research Project, funded by the Ministry of Education, Culture, Sports, Science and Technology; the Japan Science and Technology Agency; the

Frontier Research System for Global Change; the Japan Aerospace Exploration Agency; the Chinese Academy of Sciences; and the Chinese Academy of Meteorological Sciences.

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## 9.0 Missing data periods

None