TITLE

CAMP_Tibet_Amdo-Tower_20021001_20030331.flx

CONTACT

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DATE OF THIS DOCUMENT

04 Aug. 2006

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, 23:30

1.3 Temporal characteristics of the data

All parameters are recoded every 30 minutes.

1.4 Physical location of the measurement

Latitude : 32.24096 N
Longitude : 91.62493 E
Elevation : 4695.2 m a.s.l.
Landscape : Bare land (with the thin weed-like plant)
Canopy height : Less than 5cm.
Soil Characteristics: Silt loam

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

The AWS was constructed in summer 1997, and started continuous observation in May 1998. The site is located in the wide valley running from northeast to southwest, in the middle of the Tibetan Plateau. The AWS is consisted of the 14-m boundary layer tower and the 4-component radiation system. The soil temperature measured as a part of the tower observation system. The sensors are mounted on several heights.

2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Soil Heat Flux	MF-81	EKO

2.3 Instrumentation specification

Soil Heat Flux (-0.10m) : Soil heat flux at 0.1 m below the ground surface (Wm^-2)
Soil Heat Flux (-0.20m) : Soil heat flux at 0.2 m below the ground surface (Wm^-2)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original data of the soil heat flux are sampled and stored at every 5 seconds (0.2 Hz) and 10 minute average is stored in the data logger (CR-10X, Campbell).
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

The soil heat flux was computed from
G = G_raw / c
G_raw is the average voltage output from the sensor in mV and the c = 25.8×10^-3 (W^-1m^2 mV) for 0.20 m sensor and c = 24.9×10^-3 (W^-1m^2 mV) for 0.10 m sensor represents the calibration coefficient.

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

6.1.2 Quality issues

6.2 Missing data periods

The missing data period are listed in 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.

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. Meteorol. 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.

9.0 Missing data periods

File Name : CAMP_Tibet_Amdo-Tower_20021001_20030331.flx
Data Period : 2002/10/01 00:00 - 2003/03/31 23:30

Soil Heat Flux (-0.20m) and Soil Heat Flux (-0.10m)
2002/11/23 08:30 - 2002/11/28 03:30 (231)
2002/12/18 01:00
2002/12/20 20:00 - 2002/12/21 02:00 (13)
2002/12/21 17:00 - 2002/12/22 01:00 (17)
2002/12/27 20:30 - 2002/12/28 01:00 (10)
2002/12/28 23:00 - 2002/12/29 01:30 (6)
2002/12/29 22:00 - 2002/12/30 01:30 (8)
2002/12/30 23:00 - 2002/12/31 01:30 (6)
2003/01/01 17:00 - 2003/01/02 01:00 (17)
2003/01/02 22:30 - 2003/01/03 01:00 (6)
2003/01/04 00:00 - 2003/01/04 01:30 (4)
2003/01/05 21:30 - 2003/01/06 01:00 (8)
2003/01/07 01:00
2003/01/09 00:00 - 2003/01/09 01:00 (3)
2003/01/10 00:00 - 2003/01/10 01:00 (3)
2003/01/11 00:30 - 2003/01/11 01:00 (2)
2003/01/12 00:00 - 2003/01/12 01:30 (4)
2003/01/12 23:30 - 2003/01/13 01:00 (4)
2003/01/14 01:00 - 2003/01/14 01:30 (2)
2003/01/14 23:30 - 2003/01/15 01:00 (4)
2003/01/16 01:00
2003/01/17 01:30
2003/01/22 01:00 - 2003/01/22 01:30 (2)
2003/01/23 22:00 - 2003/01/24 02:00 (9)
2003/01/24 19:00 - 2003/01/25 01:30 (14)
2003/01/26 00:00 - 2003/01/26 01:00 (3)
2003/01/27 00:30 - 2003/01/27 01:00 (2)
2003/01/28 00:30 - 2003/01/28 01:00 (2)
2003/01/29 16:30 - 2003/01/30 01:00 (18)
2003/01/30 23:30 - 2003/01/31 03:00 (8)
2003/01/31 04:30
2003/02/01 00:00 - 2003/02/01 04:00 (9)

2003/02/01 17:00 - 2003/02/02 01:00 (17)
2003/02/03 00:30 - 2003/02/03 01:00 (2)
2003/02/04 00:30 - 2003/02/04 01:00 (2)
2003/02/05 01:30 - 2003/02/05 02:00 (2)
2003/02/05 23:30 - 2003/02/06 01:00 (4)
2003/02/06 23:00 - 2003/02/07 01:00 (5)
2003/02/08 00:00 - 2003/02/08 01:00 (3)
2003/02/09 00:00 - 2003/02/09 01:30 (4)
2003/02/10 22:30 - 2003/02/11 01:00 (6)
2003/02/11 23:30 - 2003/02/12 02:00 (6)
2003/02/12 21:30 - 2003/02/13 01:00 (8)
2003/02/13 21:30 - 2003/02/14 02:30 (11)
2003/02/14 15:30 - 2003/02/15 01:30 (21)
2003/02/16 00:30 - 2003/02/16 01:00 (2)
2003/02/17 00:30 - 2003/02/17 01:00 (2)
2003/02/18 00:30 - 2003/02/18 01:00 (2)
2003/02/20 20:30 - 2003/02/21 01:00 (10)
2003/02/21 20:00 - 2003/02/22 01:00 (11)
2003/02/23 00:30 - 2003/02/23 01:00 (2)
2003/02/24 00:00 - 2003/02/24 01:00 (3)
2003/02/25 22:30 - 2003/02/26 01:00 (6)
2003/02/26 22:00 - 2003/02/27 02:00 (9)
2003/02/27 20:30 - 2003/02/28 01:00 (10)
2003/03/01 01:00
2003/03/05 22:30 - 2003/03/06 01:00 (6)
2003/03/06 23:30 - 2003/03/07 01:00 (4)
2003/03/08 20:30 - 2003/03/09 01:00 (10)
2003/03/11 19:00 - 2003/03/12 01:00 (13)
2003/03/13 23:00 - 2003/03/14 01:00 (5)
2003/03/17 01:00
2003/03/21 23:00 - 2003/03/22 00:30 (4)

TITLE

CAMP_Tibet_Amdo-Tower_20030401_20030904.flx

CONTACT

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DATE OF THIS DOCUMENT

19 Apr. 2006

1. 0 DATASET OVERVIEW

1.7 Introduction

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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, 23:30

1.9 Temporal characteristics of the data

All parameters are recoded every 30 minutes.

1.10 Physical location of the measurement

Latitude : 32.24096 N
Longitude : 91.62493 E
Elevation : 4695.2 m a.s.l.
Landscape : Bare land (with the thin weed-like plant)
Canopy height : Less than 5cm.
Soil Characteristics: Silt loam

1.11 Data source

1.12 Website address references

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

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2.1 Platform

The AWS was constructed in summer 1997, and started continuous observation in May 1998. The site is located in the wide valley running from northeast to southwest, in the middle of the Tibetan Plateau. The AWS is consisted of the 14-m boundary layer tower and the 4-component radiation system. The soil temperature measured as a part of the tower observation system. The sensors are mounted on several heights.

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Soil Heat Flux	MF-81	EKO

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Soil Heat Flux (-0.10m) : Soil heat flux at 0.1 m below the ground surface (Wm^-2)
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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.

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The soil heat flux below 0.10 m was computed from
G = G_raw / c (3.2.3)
G_raw is the average voltage output from the sensor in mV and the c = 25.8×10^-3 (W^-1m^2 mV) for 0.20 m sensor and c = 24.9×10^-3 (W^-1m^2 mV) for 0.10 m sensor represents the calibration coefficient.

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

6.1.2 Quality issues

6.2 Missing data periods

The missing data period are listed in chapter 9.0.

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9.0 Missing data periods

Data Period : 2003/04/01 00:00 - 2003/09/04 23:30

Soil Heat Flux (-0.20m)
2003/04/01 23:00 - 2003/04/02 01:00 (5)
2003/04/21 01:30 - 2003/04/21 15:30 (29)
2003/05/30 03:30 - 2003/05/30 04:00 (2)
2003/09/04 13:00 - 2003/09/04 23:30 (22)

Soil Heat Flux (-0.10m)
2003/04/01 23:00 - 2003/04/02 01:00 (5)
2003/04/21 01:30 - 2003/04/21 15:30 (29)
2003/05/30 03:30 - 2003/05/30 04:00 (2)
2003/09/04 13:00 - 2003/09/04 23:30 (22)

TITLE

CAMP_Tibet_Amdo-Tower_20040421_20041231.flx_r00.doc

CONTACT

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DATE OF THIS DOCUMENT

7 July. 2006

1. 0 DATASET OVERVIEW

1.13 Introduction

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1.14 Time period covered by the data

Start: 21 April 2004, 00:00

End: 31 December 2004, 23:30

1.15 Temporal characteristics of the data

All parameters are recoded every 30 minutes.

1.16 Physical location of the measurement

Latitude : 32.24096 N
Longitude : 91.62493 E
Elevation : 4695.2 m a.s.l.
Landscape : Bare land (with the thin weed-like plant)
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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

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6.0 DATA REMARKS

6.1 PI's assessment of the data

6.1.1 Instruments problems

6.1.2 Quality issues

6.2 Missing data periods

The missing data period are listed in chapter 9.0.

7.0 REFERENCE REQUIREMENTS

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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

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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

```
---------------------------------------------------------------
File Name  : CAMP_Tibet_Amdo-Tower_20040421_20041231.flx
Data Period : 2004/04/21 00:00 - 2004/12/31 23:30
---------------------------------------------------------------

Soil Heat Flux (-0.20m)
   2004/04/21 00:00 - 2004/04/21 06:00 (13)
    2004/06/09 22:30 - 2004/08/12 06:30 (3041)
    2004/08/12 07:30

Soil Heat Flux (-0.10m)
    2004/04/21 00:00 - 2004/04/21 06:00 (13)
    2004/06/09 22:30 - 2004/08/12 06:30 (3041)
    2004/08/12 07:30
```