

TITLE

CAMP_Tibet_D66-AWS_20021001_20030331.sfc

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DATE OF THIS DOCUMENT

02 Sep. 2004 (Updated 05 Sep. 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, 23:00

1.3 Temporal characteristics of the data

All parameters are recorded every hour.

1.4 Physical location of the measurement

Latitude : 35.52353 N

Longitude : 93.78454 E

Elevation : 4585.1 m a.s.l.

Landscape : Bare land (with the thin weed-like plant)

Canopy height : Less than 5cm.

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

This AWS was constructed in summer of 1997 and measured continuously since May 1998. In summer 2000, the data logger is changed from DR101M (TEAC) to CR-10X (Campbell Scientific Inc.). The site is to represent the cold & flat location in the north end of the Qinghai Plateau (just south of the Kunlun Pass). The sensors are mounted on several heights.

2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Station Pressure	PTB100	Vaisala
Air Temperature	HMP35A	Vaisala
Relative Humidity	HMP35A	Vaisala
Wind Speed	Prop-Vane Anemometer(WS-942)	OGASAWARA
Wind Direction	Prop-Vane Anemometer(WS-942)	OGASAWARA
Precipitation	NOAH-II	OGASAWARA
Snow Depth	N/A	N/A
Incoming Shortwave	N/A	N/A
Outgoing Shortwave	N/A	N/A
Incoming Longwave	N/A	N/A
Outgoing Longwave	N/A	N/A
Skin Temperature	Infrared Radiation Thermometer (HR1-FL)	CHINO

2.3 Instrumentation specification

Station Pressure (1.0m) : Station Pressure at the 1.0m height (hPa)
Air Temperature (1.5m) : Air Temperature at the 1.5m height (deg.C)
Relative Humidity (1.5m) : Relative Humidity at the 1.5m height (%)
Wind Speed (6.0m) : Wind Speed at the 6.0m height (m/s)
Wind Direction (6.0m) : Wind Direction at the 6.0m height (deg.)
Precipitation (1.0m) : Precipitation at the 1.0m height (mm)
Skin Temperature (0.95m) : Surface Temperature sensed at the 0.95m height (deg.C)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original Data are sampled at every 1 second (0.2Hz) and 10-minute average 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

Air Temperature, relative humidity, Wind speed, Wind direction and Skin Temperature are averaged over the previous hour. Air pressure is instantaneous values of each 1 hour. Precipitation is accumulated over the previous 1 hour.

And the Two parameters indicated below were computed by using “CEOP Derived Parameter Equations : http://www.joss.ucar.edu/ghp/ceopdm/refdata_report/eqns.html” . also put the data flag “I”,

U,V Components were computed by using (GEMPAK):

$$U = -\sin(\text{direction}) * \text{wind_speed};$$
$$V = -\cos(\text{direction}) * \text{wind_speed};$$

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

Dew Point Temperature

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Precipitation

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Snow Depth

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Outgoing Shortwave

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Incoming Longwave

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Outgoing Longwave

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Net Radiation

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Incoming PAR

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

Outgoing PAR

2002/10/01 00:00 - 2003/03/31 23:00 (ALL)

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.

TITLE

CAMP_Tibet_D66-AWS_20030401_20030930.sfc

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DATE OF THIS DOCUMENT

19 Apr. 2006 (**Updated 05 Sep. 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 : 35.52353 N
Longitude : 93.78454 E
Elevation : 4585.1 m a.s.l.
Landscape : Bare land (with the thin weed-like plant)
Canopy height : Less than 5cm
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

This AWS was constructed in summer of 1997 and measured continuously since May 1998. In summer 2000, the data logger is changed from DR101M (TEAC) to CR-10X (Campbell Scientific Inc.). The site is to represent the cold & flat location in the north end of the Qinghai Plateau (just south of the Kunlun Pass). The sensors are mounted on several heights.

2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Station Pressure	PTB100	Vaisala
Air Temperature	HMP35A	Vaisala
Relative Humidity	HMP35A	Vaisala
Wind Speed	Prop-Vane Anemometer(WS-942)	OGASAWARA
Wind Direction	Prop-Vane Anemometer(WS-942)	OGASAWARA
Precipitation	NOAH-II	OGASAWARA
Snow Depth	N/A	N/A
Incoming Shortwave	N/A	N/A
Outgoing Shortwave	N/A	N/A
Incoming Longwave	N/A	N/A
Outgoing Longwave	N/A	N/A
Skin Temperature	Infrared Radiation Thermometer (HR1-FL)	CHINO

2.4 Instrumentation specification

Station Pressure (1.0m) : Station Pressure at the 1.0m height (hPa)
Air Temperature (1.5m) : Air Temperature at the 1.5m height (deg.C)

Relative Humidity (1.5m) : Relative Humidity at the 1.5m height (%)
Wind Speed (6.0m) : Wind Speed at the 6.0m height (m/s)
Wind Direction (6.0m) : Wind Direction at the 6.0m height (deg.)
Precipitation (1.0m) : Precipitation at the 1.0m height (mm)
Skin Temperature (0.95m) : Surface Temperature sensed at the 0.95m height (deg.C)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original Data are sampled at every 1 second (1Hz) and 10-minute average 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

Air Temperature, Relative humidity, Wind speed, Wind direction and Skin Temperature are averaged over the previous hour. Air pressure is instantaneous values of each 1 hour. Precipitation is accumulated over the previous 1 hour.

And the two parameters indicated below were computed by using "CEOP Derived Parameter Equations: http://www.joss.ucar.edu/ghp/ceopdm/refdata_report/eqns.html", also put the data flag "I".

U, V Components were computed by using (GEMPAK):

$$U = -\sin(\text{direction}) * \text{wind_speed};$$

$$V = -\cos(\text{direction}) * \text{wind_speed};$$

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 through 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 relative humidity data more than 100% was replaced 100% and data flag was put "I".

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.

8.0 REFERENCES

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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.

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_D66-AWS_20030401_20030930.sfc
Data Period : 2003/04/01 00:00 - 2003/09/30 23:00

Dew Point Temperature
2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

Precipitation
2003/04/01 00:00 - 2003/05/10 15:00 (952)

Snow Depth
2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

Outgoing Shortwave

2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

Incoming Longwave

2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

Outgoing Longwave

2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

Net Radiation

2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

Incoming PAR

2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

Outgoing PAR

2003/04/01 00:00 - 2003/09/30 23:00 (ALL)

TITLE

CAMP_Tibet_D66-AWS_20031001_20041231.sfc

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DATE OF THIS DOCUMENT

7 July, 2006

1.0 DATASET OVERVIEW

1.13 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.

1.14 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 : 35.52353 N
Longitude : 93.78454 E
Elevation : 4585.1 m a.s.l.
Landscape : Bare land (with the thin weed-like plant)
Canopy height : Less than 5cm
Soil Characteristics : Sand

1.17 Data source

1.18 Website address references

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

2.0 INSTRUMENTATION DESCRIPTION

2.1 Platform

This AWS was constructed in summer of 1997 and measured continuously since May 1998. In summer 2000, the data logger is changed from DR101M (TEAC) to CR-10X (Campbell Scientific Inc.). The site is to represent the cold & flat location in the north end of the Qinghai Plateau (just south of the Kunlun Pass). The sensors are mounted on several heights.

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Relative Humidity	HMP35A	Vaisala
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Wind Direction	Prop-Vane Anemometer(WS-942)	OGASAWARA
Precipitation	NOAH-II	OGASAWARA
Skin Temperature	Infrared Radiation Thermometer (HR1-FL)	CHINO

2.5 Instrumentation specification

Station Pressure (1.0m) : Station Pressure at the 1.0m height (hPa)
Air Temperature (1.5m) : Air Temperature at the 1.5m height (deg.C)
Relative Humidity (1.5m) : Relative Humidity at the 1.5m height (%)
Wind Speed (6.0m) : Wind Speed at the 6.0m height (m/s)
Wind Direction (6.0m) : Wind Direction at the 6.0m height (deg.)
Precipitation (1.0m) : Precipitation at the 1.0m height (mm)
Skin Temperature (0.95m) : Surface Temperature sensed at the 0.95m height (deg.C)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original Data are sampled at every 1 second (1Hz) and 10-minute average is computed and stored in a data logger (Campbell CR-10X).

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3.2 Description of derived parameters and processing techniques used

Air Temperature, Relative humidity, Wind speed, Wind direction and Skin Temperature are averaged over the previous hour. Air pressure is instantaneous values of each 1 hour. Precipitation is accumulated over the previous 1 hour.

And the two parameters indicated below were computed by using "CEOP Derived Parameter Equations: http://www.joss.ucar.edu/ghp/ceopdm/refdata_report/eqns.html", also put the data flag "I".

U, V Components were computed by using (GEMPAK):

$$U = -\sin(\text{direction}) * \text{wind_speed};$$

$$V = -\cos(\text{direction}) * \text{wind_speed};$$

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 through 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

None.

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.

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_D66-AWS_20031001_20041231.sfc
Data Period : 2003/10/01 00:00 - 2004/12/31 23:00

Station Pressure
No missing data.

Air Temperature
No missing data.

Dew Point Temperature
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)

Relative Humidity
No missing data.

Specific Humidity
No missing data.

Wind Speed
No missing data.

Wind Direction
No missing data.

U Wind Component
No missing data.

V Wind Component
No missing data.

Precipitation
2003/10/01 00:00 - 2004/02/05 15:00 (3064)
2004/03/31 17:00 - 2004/12/31 23:00 (6607)

Snow Depth
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)

Incoming Shortwave
No missing data.

Outgoing Shortwave
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)

Incoming Longwave
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)

Outgoing Longwave
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)

Net Radiation
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)

Skin Temperature
No missing data.

Incoming PAR
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)

Outgoing PAR
2003/10/01 00:00 - 2004/12/31 23:00 (ALL)