TITLE

CAMP_Tibet_D110-AWS_20021001_20030331.sfc

CONTACT

Ken'ich UENO
University of Shiga Prefecture
Hassaka 2500 Hikone,Shiga 522-8533, Japan
Phone: +81-749-28-8312
Fax : +81-749-28-8477
Email: kueno@ses.usp.ac.jp

Kenji Tanaka
Department of Civil and Environmental Engineering, Kumamoto Univsersity
Kurokami 2-39-1, Kumamoto, Kumamoto Pref., 860-8555, Japan
Phone: +81-96-342-3601
Fax : +81-96-342-3601
Email: ktanaka@gpo.kumamoto-u.ac.jp

DATE OF THIS DOCUMENT

24 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 recoded every hour.

1.4 Physical location of the measurement

Latitude : 32.69303 N
Longitude : 91.87408 E
Elevation : 4984.8 m a.s.l.

Landscape : Grassland
Canopy height : Less than 10cm.
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

Simple hand-made AWS was constructed in summer 2002 to represent the cold& flat location south of Tanggula Mt. to measure especially for snow cover condition. The AWS system is different from other stations, and details are requested to contact with Ueno.

2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Station Pressure	N/A	N/A
Air Temperature	TS-801(Pt100)	Okazaki
Relative Humidity	HMP-45D	VAISALA
Wind Speed	A100R	Vector Instruments
Wind Direction	N/A	N/A
Precipitation	NOAH-II	ETI
Snow Depth	SR-50	CAMPBEL
Incoming Shortwave	PCM-01	Kip&Zonen
Outgoing Shortwave	Photo diode	N/A
Incoming Longwave	N/A	N/A
Outgoing Longwave	N/A	N/A
Skin Temperature	N/A	N/A

2.3 Instrumentation specification

Air Temperature (0.75m) : Air Temperature at the 0.75m height (deg.C)
Relative Humidity (2.5m) : Relative Humidity at the 2.5m height (%)
Wind Speed (2.85m) : Wind Speed at the 2.85m height (m/s)
Precipitation (2.85m) : Precipitation at the 2.85m height (mm)
Snow Depth (2.05m) : Snow depth sensed at the 2.05m height (cm)
Incoming Shortwave (2.45m) : Shortwave Downward Radiation sensed at the 2.45m height (W/m^2)
Outgoing Shortwave (2.23m) : Estimated by using simple albedo meter at the 2.23m height (W/m^2)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original data is stored 30 minuets interval for humidity, precipitation, and estimated up-ward short wave radiation by GRANS data logger, and 20 minuets for other parameter by CR10 data logger. Those are averaged to hourly interval data.
There is a handmade albedo meter composed of two photo-sensor (upward and downward). According to the calibration coefficient between downward shortwave

radiation measured by manufactured sensor and downward photo-sensor, upward radiation was estimated by using upward photo-sensor. Therefore, flag of upward radiation data is “I”.
Data are downloaded from the data unit 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, radiation, Wind speed are averaged at the time stamp hour. Snow depth is instantaneous value of each 1 hour. Precipitation is accumulated over the previous 1 hour. Upward radiation is the estimated values by using downward measurement and albedo values measured by hand-made simple albedo meter.

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.
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

The Relative humidity data, the sensor was not calibrated and caused sporadic errors during the observation period. Then the Quality control flag was put “B”.

6.1.2 Quality issues

Condition of the snow depth sensor was better than at D105 or BJ sites, but the sensor condition is the same as at ANNI site.
Relative distance between the sensor and ground surface was determined during the warm season, and deduced from the original data. The flag was put “I”.

6.2 Missing data periods

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

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

Relative Humidity
2003/03/23 18:00 - 2003/03/31 23:00 (198)

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

Wind Speed
2003/03/23 18:00 - 2003/03/31 23:00 (198)

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

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

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

Precipitation
2002/10/07 16:00 - 2003/03/31 23:00 (4208)

Outgoing Shortwave
2002/10/08 00:00 - 2002/10/08 04:00 (5)
2003/03/23 18:00 - 2003/03/31 23:00 (198)

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)

Skin Temperature
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

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_D110-AWS_20030401_20030930.sfc

CONTACT

Ken'ich UENO
University of Tsukuba
Tennoudai 1-1-1 Tsukuba, Ibaraki 305-8572, Japan
Phone/Fax: +8129-853-4399
Email: kenueno@sakura.cc.tsukuba.ac.jp

Kenji Tanaka
Department of Civil and Environmental Engineering, Kumamoto University
Kurokami 2-39-1, Kumamoto, Kumamoto Pref., 860-8555, Japan
Phone/Fax: +81-96-342-3601
Email: ktanaka@gpo.kumamoto-u.ac.jp

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	: 32.69303 N
Longitude	: 91.87408 E
Elevation	: 4984.8 m a.s.l.
Landscape	: Grassland
Canopy height	: Less than 10cm.

Soil Characteristics: Silt loam

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

Simple hand-made AWS was constructed in summer 2002 to represent the cold& flat location south of Tanggula Mt. to measure especially for snow cover condition. The AWS system is different from other stations, and details are requested to contact with Ueno.

2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Air Temperature	TS-801(Pt100)	Okazaki
Precipitation	NOAH-II	ETI
Snow Depth	SR-50	CAMPBEL
Incoming Shortwave	PCM-01	Kip&Zonen
Outgoing Shortwave	Photo diode	N/A

2.4 Instrumentation specification

Air Temperature (0.75m) : Air Temperature at the 0.75m height (deg.C)
Precipitation (2.85m) : Precipitation at the 2.85m height (mm)
Snow Depth (2.05m) : Snow depth sensed at the 2.05m height (cm)
Incoming Shortwave (2.45m) : Shortwave Downward Radiation sensed at the 2.45m height (W/m^2)
Outgoing Shortwave (2.23m) : Estimated by using simple albedo meter at the 2.23m height (W/m^2)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original data is stored 30 minuets interval for humidity, precipitation, and estimated up-ward short wave radiation by GRANS data logger, and 20 minuets for other parameter by CR10 data logger. Those are averaged to hourly interval data.
There is a handmade albedo meter composed of two photo-sensor (upward and downward). According to the calibration coefficient between downward shortwave radiation measured by manufactured sensor and downward photo-sensor, upward radiation was estimated by using upward photo-sensor. Therefore, flag of upward radiation data is “I”.
Data are downloaded from the data unit 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 and radiation are averaged at the time stamp hour. Snow depth is instantaneous value of each 1 hour. Precipitation is accumulated over the previous 1 hour.

Upward radiation is the estimated values by using downward measurement and albedo values measured by hand-made simple albedo meter.

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.
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

The Relative humidity data, the sensor was not calibrated and caused sporadic errors during the observation period. Then the Quality control flag was put “B”.

6.1.2 Quality issues

Condition of the snow depth sensor was rather better than at D105 or BJ sites, but the sensor condition is the same as at ANNI site.
Relative distance between the sensor and ground surface was determined during the warm season, and deduced from the original data. The flag was put “I”, except for missing period as mentioned in 9.0.

6.2 Missing data periods

Upward radiation, wind speed, and relative humidity data are missing after 2003/03/10.
Please see the chapter 9.0 for snow depth data.

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

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_D110-AWS_20030401_20030930.sfc
Data Period : 2003/04/01 00:00 - 2003/09/30 23:00

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

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

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

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

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

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

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

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

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

Snow Depth
2003/05/14 01:00
2003/06/22 01:00 - 2003/06/22 02:00 (2)
2003/07/15 00:00 - 2003/07/15 01:00 (2)

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)

Skin Temperature
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_D110-AWS_20030401_20030930.sfc

CONTACT

Ken'ich UENO
University of Tsukuba
Tennoudai 1-1-1 Tsukuba, Ibaraki 305-8572, Japan
Phone/Fax: +8129-853-4399
Email: kenueno@sakura.cc.tsukuba.ac.jp

Kenji Tanaka
Department of Civil and Environmental Engineering, Kumamoto University
Kurokami 2-39-1, Kumamoto, Kumamoto Pref., 860-8555, Japan
Phone/Fax: +81-96-342-3601
Email: ktanaka@gpo.kumamoto-u.ac.jp

DATE OF THIS DOCUMENT

19 Apr. 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 2002, 00:00
End: 30 September 2003, 23:00

1.15 Temporal characteristics of the data

All parameters are recoded every hour.

1.16 Physical location of the measurement

Latitude	: 32.69303 N
Longitude	: 91.87408 E
Elevation	: 4984.8 m a.s.l.
Landscape	: Grassland
Canopy height	: Less than 10cm.

Soil Characteristics: Silt loam

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

Simple hand-made AWS was constructed in summer 2002 to represent the cold& flat location south of Tanggula Mt. to measure especially for snow cover condition. The AWS system is different from other stations, and details are requested to contact with Ueno.

2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Air Temperature	TS-801(Pt100)	Okazaki
Precipitation	NOAH-II	ETI
Snow Depth	SR-50	CAMPBEL
Incoming Shortwave	PCM-01	Kip&Zonen
Outgoing Shortwave	Photo diode	N/A

2.5 Instrumentation specification

Air Temperature (0.75m) : Air Temperature at the 0.75m height (deg.C)
Precipitation (2.85m) : Precipitation at the 2.85m height (mm)
Snow Depth (2.05m) : Snow depth sensed at the 2.05m height (cm)
Incoming Shortwave (2.45m) : Shortwave Downward Radiation sensed at the 2.45m height (W/m^2)
Outgoing Shortwave (2.23m) : Estimated by using simple albedo meter at the 2.23m height (W/m^2)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Original data is stored 30 minuets interval for humidity, precipitation, and estimated up-ward short wave radiation by GRANS data logger, and 20 minuets for other parameter by CR10 data logger. Those are averaged to hourly interval data.
There is a handmade albedo meter composed of two photo-sensor (upward and downward). According to the calibration coefficient between downward shortwave radiation measured by manufactured sensor and downward photo-sensor, upward radiation was estimated by using upward photo-sensor.
Data are downloaded from the data unit 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 and radiation are averaged at the time stamp hour. Snow depth is instantaneous value of each 1 hour. Precipitation is accumulated over the previous 1 hour.

Upward radiation is the estimated values by using downward measurement and albedo values measured by hand-made simple albedo meter.

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.
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

Regarding the snow depth and precipitation data, there are sporadic noise in the data and the reason is still not be sure. Then the Quality control flag was put “D”. Additionally the Relative humidity data, the sensor was not calibrated and caused sporadic errors during the observation period. Then the Quality control flag was put “B”.

6.1.2 Quality issues

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

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

Snow Depth

2003/04/02 19:00 - 2003/04/03 00:00 (6)
2003/04/05 19:00 - 2003/04/06 00:00 (6)
  2003/04/06 22:00 - 2003/04/07 00:00 (3)
  2003/04/07 03:00 - 2003/04/07 10:00 (8)
  2003/04/07 17:00 - 2003/04/08 00:00 (8)
  2003/04/08 04:00 - 2003/04/08 07:00 (4)
  2003/04/09 06:00 - 2003/04/09 07:00 (2)
  2003/04/09 23:00 - 2003/04/10 00:00 (2)
  2003/04/10 22:00 - 2003/04/11 00:00 (3)
  2003/04/11 04:00 - 2003/04/11 09:00 (6)
  2003/04/12 18:00 - 2003/04/12 20:00 (3)
  2003/04/13 17:00 - 2003/04/14 00:00 (8)
  2003/04/16 03:00 - 2003/04/16 04:00 (2)
  2003/04/17 05:00 - 2003/04/17 12:00 (8)
  2003/04/17 19:00 - 2003/04/18 00:00 (6)
  2003/04/18 02:00 - 2003/04/18 12:00 (11)
  2003/04/23 17:00 - 2003/04/23 23:00 (7)
  2003/05/03 04:00 - 2003/05/03 13:00 (10)
  2003/05/03 15:00 - 2003/05/03 18:00 (4)
  2003/05/04 01:00 - 2003/05/04 05:00 (5)
  2003/05/05 08:00 - 2003/05/05 12:00 (5)
  2003/05/06 07:00 - 2003/05/06 08:00 (2)
  2003/05/08 15:00 - 2003/05/08 23:00 (9)
  2003/05/09 04:00 - 2003/05/09 05:00 (2)
  2003/05/10 07:00 - 2003/05/10 08:00 (2)
  2003/05/12 07:00
  2003/05/15 01:00
  2003/05/15 11:00
  2003/05/22 12:00
  2003/06/13 18:00 - 2003/06/13 20:00 (3)
  2003/06/13 22:00 - 2003/06/13 23:00 (2)
  2003/06/14 01:00
  2003/07/02 03:00 - 2003/07/02 04:00 (2)
  2003/07/10 09:00 - 2003/07/10 10:00 (2)
  2003/07/15 02:00 - 2003/07/15 04:00 (3)
  2003/07/31 03:00 - 2003/07/31 04:00 (2)
  2003/09/01 07:00 - 2003/09/01 08:00 (2)
  2003/09/15 03:00 - 2003/09/30 23:00 (381)