TITLE

CAMP_Korean-Peninsula_DK_20021001_20030331.sfc

CONTACT

Joon Kim
Department of Atmospheric Sciecnes, Yonsei University.
Sinchon-dong 134, Seoul, Korea, 120-749
Phone: +82-2-2123-2691
Fax : +82-2-2123-2691
Email: joon-kim@yonsei.ac.kr

DATE OF THIS DOCUMENT

17 Sep. 2004
Updated 29 Jan. 2005

1. 0 DATASET OVERVIEW

1.1 Introduction

   The objectives of CAMP Korean-Peninsula DK site as a part of KoFLUX are (1) to understand the mechanisms controlling the exchange of CO_2, water vapor and energy between the atmosphere and broadleaf deciduous forest and (2) to provide ground information for validating estimates of net primary productivity, evapotranspiration, and energy absorption that are being generated by various biosphere models and sensors on the satellite.

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 30 minutes.

1.4 Physical location of the measurement

   Latitude   : 37.74870 N
   Longitude   : 127.14816 E
   Elevation   : 330 m a.s.l.
   Landscape   : Quercus serrata (Broadleaf deciduous forest).
                     The fetch is 2 km (90 ± 45degree)
   Canopy height   : 18 to 20 m
   Soil Characteristics: loam or sandy loam

1.5 Data source

1.6 WWW address references

www.koflux.org

2.0 INSTRUMENTATION DESCRIPTION

2.1 Platform

The sensors are mounted on several heights.

2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Station Pressure	CS7500	CAMPBELL
Air Temperature	HMP45C	CAMPBELL
Relative Humidity	HMP45C	CAMPBELL
Wind Speed	Cup anemometer & CSAT3	CAMPBELL
Wind Direction	Cup anemometer & CSAT3	CAMPBELL
Precipitation	TE525	CAMPBELL
Incoming Shortwave	CNR-1	Kipp & Zonen
Outgoing Shortwave	CNR-1	Kipp & Zonen
Incoming Longwave	CNR-1	Kipp & Zonen
Outgoing Longwave	CNR-1	Kipp & Zonen
Skin Temperature	N/A	N/A

2.3 Instrumentation specification

Station Pressure (31m)   : Station Pressure at the 31 m height (hPa)
Air Temperature (29m)   : Air Temperature at the 29 m height (deg.C)
Relative Humidity(29m)   : Relative Humidity at the 29 m height (%)
U Wind Component (31m)   : U Wind component velocity average at the 31m height (m/s)
V Wind Component (31m)   : V Wind component velocity average at the 31m height (m/s)
Wind Direction (31m)   : Wind Direction at the 31m height (deg.)
Incoming Shortwave (30m)   : Shortwave Downward Radiation at the 30m height (W/m^2)
Outgoing Shortwave (30m)   : Shortwave Upward Radiation at the 30m height (W/m^2)
Incoming Longwave (30m)   : Longwave Downward Radiation at the 30m height (W/m^2)
Outgoing Longwave (30m)   : Longwave Upward Radiation at the 30m height (W/m^2)

3.0 DATA COLLECTION AND PROCESSING

3.1 Description of data collection

Data are downloaded from the Tower twice a month. Then, data are sent to Seoul.

3.2 Description of derived parameters and processing techniques used

Station Pressure, Air Temperature, U wind component, V wind component, Wind direction, Incoming Short wave, Outgoing Short wave, Incoming Long wave and Outgoing Long wave are averaged over the previous 30 minutes.

And the Dew Point Temperature, Specific Humidity and Net radiation is computed by using "CEOP Derived Parameter Equations: http://www.joss.ucar.edu/ghp/ceopdm/refdata_report/eqns.html". Also put the data flag "I",

Dew Point Temperature was computed by using (Bolton 1980):
es = 6.112 * exp((17.67 * T)/(T + 243.5));
e = es * (RH/100.0);
Td = log(e/6.112)*243.5/(17.67-log(e/6.112));
   where:
     T = temperature in deg C;
     es = saturation vapor pressure in mb;
     e = vapor pressure in mb;
     RH = Relative Humidity in percent;
     Td = dew point in deg C

Specific Humidity was computed by using (Bolton 1980):
e = 6.112*exp((17.67*Td)/(Td + 243.5));
q = (0.622 * e)/(p - (0.378 * e));
   where:
     e = vapor pressure in mb;
     Td = dew point in deg C;
     p = surface pressure in mb;
     q = specific humidity in kg/kg.

NET radiation (GEMPAK):
   NET_radiation = down (in) short + down (in) long - up (out) short - up (out) long;

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 <u>PI's assessment of the data</u>

6.1.1 <u>Instruments problems</u>

None.

6.1.2 <u>Quality issues</u>

3

6.2 <u>Missing data periods</u>

None

7.0 REFERENCE REQUIREMENTS

Original data was collected and is provided by the Ministry of Environment of Korea through "The Eco-Technopia 21 Project" under the framework of Coordinated Enhanced Observation Period (CEOP) Asian Monsoon Project (CAMP).

8.0 REFERENCES

Kim, J., W. Kim, C. Cho, B. Choi, H. Chung, B. Lee, K. Kim, K. Kim, M. Kim, B. Lee, D. Lee, G. Lee, J. Lee, J. Lim, J. Oh, E. Park, J. Shim, J. Yun, C. Rho, 2002, KOFLUX: A new tool to study the biosphere-atmosphere interactions in Asia, in *Ecology of Korea* edited by D. Lee, 215-229.