1.0 DATA SET OVERVIEW:

1.1 Introduction or abstract

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Meteorology and Hydrology, Ministry of Nature and Environment, Mongolia.

1.2 Time period covered by the data

The First half CEOP EOP-3 time period (01 October 2002 to 31 March 2003).

1.3 Physical location (including lat/lon/elev) of the measurement or platform

<table>
<thead>
<tr>
<th>Station name</th>
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<tr>
<td>BTS</td>
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Table : AWS Type of Data.

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3.0 DATA COLLECTION AND PROCESSING:

Wind speed, Wind direction, Relative humidity, Temperature, Air Pressure,
Soil surface temperature and radiation are averaged over the previous 30 minutes. Precipitation is accumulated on the previous 30 minutes. The instruments height of each sensor are as follows:

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This format is described in detail as part of the CEOP Reference Site Data Set Procedures Report which is available at the following URL:

http://www.joss.ucar.edu/ghp/ceopdm/refdata_report/ceop_sfc_met_format.html

4.0 QUALITY CONTROL PROCEDURES

4.1 CAMP QC/QA 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.

4.2 UCAR/JOSS QC/QA Procedures
Additionally, UCAR/JOSS conducted two primary quality assurance/control procedures on the reference site data. First the data has been evaluated by a detailed QA algorithm that verifies the format is correct, examines any QC flags, and conducts basic checks on data values. Second, JOSS conducts a manual inspection of time series plots of each parameter.

UCAR/JOSS did not change any QC flags applied by CAMP.

5.0 GAP FILLING PROCEDURES

Filled in gap by the Missing value "-999.99".

6.0 DATA REMARKS:

6.1 Missing data periods

7.0 REFERENCE REQUIREMENTS:

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1.2 Time period covered by the data

The latter half CEOP EOP-3 time period (01 April 2003 to 30 September 2003).

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<td>ANALOG BAROMETER PTB101 (Campbell; VAISALA)</td>
</tr>
</tbody>
</table>
Soil surface temp. | 55-99.9 | degC | 4000.4G (EVEREST)
-------------------+---------+--------+----------------------------
Rn(net radiation) | 0.25 - 60| microm | NET RADIOMETER Q7(REBS)
-------------------+---------+--------+----------------------------
Rainfall(P)       | 0.2     | mm     | RAIN COLLECTOR II(Davis)
-------------------+---------+--------+----------------------------

3.0 DATA COLLECTION AND PROCESSING:

Wind speed, Wind direction, Relative humidity, Temperature, Air Pressure,
Soil surface temperature and radiation are averaged over the previous 30
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And the three 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", In the case of calculated by using dubious value flagged "D", the data flag was put "D".

Dew Point Temperature were computed by using (Bolton 1980):
\[
es = 6.112 \times \exp((17.67 \times T)/(T + 243.5))
\]
\[
e = es \times (RH/100.0)
\]
\[
Td = \log(e/6.112) \times 243.5/(17.67-\log(e/6.112))
\]
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 were computed by using (Bolton 1980):
\[
e = 6.112 \times \exp((17.67 \times Td)/(Td + 243.5))
\]
\[
q = (0.622 \times e)/(p - (0.378 \times e))
\]
where:
  e  = vapor pressure in mb;
  Td = dew point in deg C;
  p  = surface pressure in mb;
  q  = specific humidity in kg/kg.

U,V Components (4.6m) were computed by using (GEMPAK):
  U = -sin(direction) * wind_speed;
  V = -cos(direction) * 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.

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

5.0 GAP FILLING PROCEDURES

N/A

6.0 DATA REMARKS:

6.1 Missing data periods

6.2 Data Quality issues

The net radiation from 23-30 September 2003 seems to be too low. All values are less than 100 W/m2. This is the reason that rainfall or snowfall from 23-30 September 2003.

7.0 REFERENCE REQUIREMENTS:

Original data were collected and provided within the framework of JAXA-JRA "Ground Truth for Evaluation of Soil Moisture and Geophysical/Vegetation parameters Related to Ground Surface Conditions with AMSR and GLI in the Mongolian Plateau" (PI : Prof. I. Kaihotsu, Hiroshima Univ.). This JRA has been actually carrying out as an international cooperational project with Institute of Meteorology and Hydrology of National Agency for Meteorology, hydrology and Environment Monitoring of Mongolia.

8.0 REFERENCES:


T. Koike, Y. Nakamura, I. Kaihotsu, G. Davaa, N. Matsuura, 2003:
AMSR-E Soil Moisture Product validated at the CEOP Mongolia Reference Site. CEOP Newsletter, No.4, P5.
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1.2 Time period covered by the data
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\[ es = 6.112 \times \exp\left((17.67 \times T)/(T + 243.5)\right) \]
\[ e = es \times \frac{RH}{100.0}; \]
\[ Td = \log\left(\frac{e}{6.112}\right) \times \frac{243.5}{17.67 - \log\left(\frac{e}{6.112}\right)}; \]
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 were computed by using (Bolton 1980):
\[ e = 6.112 \times \exp\left(\frac{17.67 \times Td}{Td + 243.5}\right); \]
\[ q = \frac{(0.622 \times e)}{(p - (0.378 \times e))}; \]
where:
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N/A

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8.0 REFERENCES:


9.0 Missing Data Periods:

File Name : CAMP_Mongolia_BTS_20031001_20040331.sfc
Data Period : 2003/10/01 00:00 - 2004/03/31 23:30

Station Pressure
   No missing data.

Air Temperature
   No missing data.

Dew Point Temperature
   No missing data.

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
   No missing data.

Snow Depth
   2003/10/01 00:00 - 2004/03/31 23:30 (ALL)

Incoming Shortwave
   2003/10/01 00:00 - 2004/03/31 23:30 (ALL)

Outgoing Shortwave
   2003/10/01 00:00 - 2004/03/31 23:30 (ALL)

Incoming Longwave
   2003/10/01 00:00 - 2004/03/31 23:30 (ALL)

Outgoing Longwave
   2003/10/01 00:00 - 2004/03/31 23:30 (ALL)

Net Radiation
   No missing data.

Skin Temperature
   No missing data.

Incoming PAR
   2003/10/01 00:00 - 2004/03/31 23:30 (ALL)

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</tr>
<tr>
<td>Rn (net radiation)</td>
<td>1.5 m</td>
</tr>
<tr>
<td>Rainfall (P)</td>
<td>1.0 m</td>
</tr>
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</table>

And the three 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", In the case of calculated by using dubious value fagged "D", the data flag was put "D".

Dew Point Temperature were computed by using (Bolton 1980):

\[
es = 6.112 \times \exp((17.67 \times T)/(T + 243.5))\]
\[ e = es \times (RH/100.0); \]
\[ Td = \log(e/6.112) \times 243.5/(17.67 - \log(e/6.112)); \]
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 were computed by using (Bolton 1980):
\[ e = 6.112 \times \exp((17.67*Td)/(Td + 243.5)); \]
\[ q = (0.622 \times e)/(p - (0.378 \times e)); \]
where:
- \( e \) = vapor pressure in mb;
- \( Td \) = dew point in deg C;
- \( p \) = surface pressure in mb;
- \( q \) = specific humidity in kg/kg.

\( U, V \) Components (4.6m) were computed by using (GEMPAK):
\[ U = -\sin(direction) \times \text{wind\_speed}; \]
\[ V = -\cos(direction) \times \text{wind\_speed}; \]

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

5.0 GAP FILLING PROCEDURES

N/A

6.0 DATA REMARKS:

7.0 REFERENCE REQUIREMENTS:

Original data were collected and provided within the framework of JAXA-JRA "Ground Truth for Evaluation of Soil Moisture and Geophysical/Vegetation parameters Related to Ground Surface Conditions with AMSR and GLI in the Mongolian Plateau" (PI : Prof. I. Kaihotsu,
This JRA has been actually carrying out as an international co-operative project with Institute of Meteorology and Hydrology of National Agency for Meteorology, hydrology and Environment Monitoring of Mongolia.

8.0 REFERENCES:


9.0 Missing Data Periods:

File Name : CAMP_Mongolia_BTS_20040401_20041231.sfc
Data Period : 2004/04/01 00:00 - 2004/12/31 23:30

Station Pressure
2004/06/01 06:00 - 2004/06/01 06:30 (2)

Air Temperature
2004/06/01 06:00 - 2004/06/01 06:30 (2)

Dew Point Temperature
2004/06/01 06:00 - 2004/06/01 06:30 (2)

Relative Humidity
2004/06/01 06:00 - 2004/06/01 06:30 (2)

Specific Humidity
2004/06/01 06:00 - 2004/06/01 06:30 (2)

Wind Speed
2004/06/01 06:00 - 2004/06/01 06:30 (2)

Wind Direction
2004/06/01 06:00 - 2004/06/01 06:30 (2)

U Wind Component
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<th>End Date</th>
<th>Duration</th>
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<td>(ALL)</td>
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</tbody>
</table>