Surface Atmospheric Measurement Stations Mini Network One Minute Average Data Located to the East and South East of Granite Peak

MINISAMS

Author(s):	Regarding data questions contact:
John C. Pace Mailing address: Meteorology Division, West Desert Test Facility, Dugway Proving Grounds, Dugway, Utah Tel./Fax.: 435-831-5101/ , E-mail and web: john.c.pace.civ@mail.mil, http://www.dugway.army.mil/Meteorology.aspx	Tamas Zsedrovits Mailing address: 156 Fitzpatrick Hall of Engineering, Notre Dame, IN, USA, 46556 Tel./Fax.: 574-323-5672/ E-mail and web: tzsedrov@nd.edu, http://jump.itk.ppke.hu/nce/zsedro

1.0 Data Set Overview

1.1 Time period covered by the data

Approximately October 2012 and May 2013. For specific times please refer to individual file names.

1.2 Physical location (latitude, longitude, elevation)

The exact coordinates are contained in each individual data file for each specific station., 0, 0

1.3 Instrument type

MesoNET

1.4 Data provider

Dugway Proving Ground

1.5 Web address references

http://www3.nd.edu/~dynamics/materhorn/

https://www.eol.ucar.edu/field_projects/materhorn-x

2.0 Instrument Description

A network very similar to the surface atmospheric measurement systems (SAMS). The exact coordinates are contained in each individual data file for each specific station. This network contains fifty-one stations in a regularly spaced formation to the east and southeast of Granite Peak. Similar to the SAMS the mini-SAMS also are 10-m towers with vane anemometers (RM Young model 05103) at 2 and 10 m above ground level (AGL). Temperature and Relative Humidity probes are mounted at 2 and 10 m AGL. Also included: surface barometric pressure, solar radiation.

2.1 Instrument website

http://www.youngusa.com/products/7/5.html

https://www.campbellsci.com/hmp45c-l

https://www.campbellsci.com/cs106

https://www.campbellsci.com/solar-radiation

https://www.campbellsci.com/solar-panels

https://www.campbellsci.com/cr3000

http://www.alumatower.com/

2.2 Table of specifications

Accuracy	Range	Frequency	Resolution
See individual instrument websites	See individual instrument websites	See individual instrument websites	See individual instrument websites

3.0 Data Collection and Processing

3.1 Description of data collection

Continuous data collection was conducted during the entire field campaign, with 1 minute averages.

3.2 Description of derived parameters and processing techniques used

Original output files were split by station, field campaign, and saved as MATLAB mat files in table variables including units in the properties of the table.

3.3 Description of quality assurance and control procedures

This dataset was not subject to any quality control or processing it has been provided in its original form.

3.4 Data intercomparisons

4.0 Data Format

4.1 Data file structure

MAT files, with table variables for each station.

4.2 File naming convention

dataProvider_instrument[_identifier]_rate_instrumentType_startDateAndTime_endDateAndTime.extension

4.3 Data format

MATLAB MAT files, v7

4.4 Data layout

In each MAT file data for a single station is provided with timestamp.

4.5 List of parameters with units, sampling intervals, frequency, range

Datenumber() - MATLAB datenum format. See MATLAB help on datenum.

Description10Mean() -

Elevation(m) - Elevation above sea level.

FullDateUTC(YYYY-MM-DD hh:mm:ss) -

Latitude(deg) -

Longitude(deg) -

PressureMean(hPa) - Average barometric pressure measured at the location of the data logger.

RelativeHumidity10Mean(%) - Average relative humidity measured at 10m AGL.

RelativeHumidity2Mean(%) - Average relative humidity measured at 2m AGL.

Solar(W/m^2) - Average surface net downwelling short wave flux in air.

SurfaceDownwellingShortwaveFluxInAir(W/m^2) - Average surface net downwelling short wave flux in air.

Temperature10Mean(C) - Average temperature measured at 10m AGL.

Temperature2Mean(C) - Average temperature measured at 2m AGL.

U10Mean(m/s) - Average east-west wind velocity component measured at 10m AGL. Positive flowing from the west to the east.

U2Mean(m/s) - Average east-west wind velocity component measured at 2m AGL. Positive flowing from the west to the east.

V10Mean(m/s) - Average north-south wind velocity component measured at 10m AGL. Positive flowing from the south to the north.

V2Mean(m/s) - Average north-south wind velocity component measured at 2m AGL. Positive flowing from the south to the north.

WindDescription10Mean() - 1-3 letter description of the approaching direction of the wind provided by the average wind direction, measured at 10m AGL. For example: N - from the north, Calm - the wind speed is below the instrument threshold, SSW - from the South-Southwest

WindDescription2Mean() - 1-3 letter description of the approaching direction of the wind provided by the average wind direction, measured at 2m AGL. For example: N - from the north, Calm - the wind speed is below the instrument threshold, SSW - from the South-Southwest

WindDirection10Mean(deg) - Average wind direction measured from North, at 10m AGL. North = 0, East = 90, South = 180, West = 270.

WindDirection2Mean(deg) - Average wind direction measured from North, at 2m AGL. North = 0, East = 90, South = 180, West = 270.

WindSpeed10Mean(m/s) - Average wind magnitude measured at 10m AGL.

WindSpeed2Mean(m/s) - Average wind magnitude measured at 2m AGL.

4.6 Data version number and date

raw, v1.0, October 2016

4.7 Description of flags, codes used in the data, and definitions

NaN means either out of range or missing data

4.8 Data sample

```
Sample dataset is not suitable for display in this document.
```

5.0 Data Remarks

5.1 PI's assessment of the data

5.2 Missing data periods

5.3 Software compatibility

MATLAB 2006a (version 7.0) or later

6.0 References

[1] Fernando, H. J. S., E. R. Pardyjak, S. Di Sabatino, F. K. Chow, S. F. J. DeWekker, S. W. Hoch, J. Hacker, J. C. Pace, T. Pratt, Z. Pu, J. W. Steenburgh, C. D. Whiteman, Y. Wang, D. Zajic, B. Balsley, R. Dimitrova, G. D. Emmitt, C. W. Higgins, J. C. R. Hunt, J. G. Knievel, D. Lawrence, Y. Liu, D. F. Nadeau, E. Kit, B. W. Blomquist, P. Conry, R. S. Coppersmith, E. Creegan, M. Felton, A. Grachev, N. Gunawardena, C. Hang, C. M. Hocut, G. Huynh, M. E. Jeglum, D. Jensen, V. Kulandaivelu , M. Lehner, L. S. Leo, D. Liberzon, J. D. Massey, K. McEnerney, S. Pal, T. Price, M. Sghiatti, Z. Silver, M. Thompson, H. Zhang, T. Zsedrovits, 2015: The MATERHORN – Unraveling the Intricacies of Mountain Weather, BAMS, doi: http://dx.doi.org/10.1175/BAMS-D-13-00131.1.