



5 Minute Statistics of ISFF data during CASES-99

5 Minute ISFF Data for CASES99

These data contain surface meteorology measurements of the [Integrated Surface Flux Facility \(ISFF\)](#) during the CASES99 field project, in October, 1999. Note: ISFF is now known as ISFS.

For general information about the operations of the ISFS during CASES99 see <https://www.eol.ucar.edu/content/integrated-surface-flux-facility-during-cases99>.

The 5 minute files contain means, variances and covariances of ISFF variables that were sampled on the main tower and the six outlying towers. We recommend combining these to obtain more statistically-significant averages over longer time periods.

The data are stored in NetCDF files. Information on the NetCDF file format and software is available at <http://www.unidata.ucar.edu/software/netcdf/>. Information specific to ISFS NetCDF files is available at <https://www.eol.ucar.edu/content/isfs-netcdf-files>.

The NetCDF file names are cases.99MMDD.nc, where MMDD is the starting month and day in UTC.

Quality Control

No removal of questionable data has been performed on this data.

Some variables can be used as quality indicators. The Campbell CSAT3 sonic anemometers at 1.5, 5, 30 and 50 meters on the tower provide a **diag** bit-field variable, which will be zero if the sonic transducer signal levels and measured speed of sound on the 3 axes are within acceptable ranges. Wind vectors and sonic temperature values should not be used when **diag** is non-zero.

The ATI sonic anemometers on the tower at 10, 20, 40 and 55 meters, and at 5 meters on the outlying stations provide **usamples**, **vsamples** and **wsamples** variables, which contain the number of 200 Hz samples that were averaged within the sonic to create a 20 Hz sample. A value of 10 indicates the sonic was working correctly. Wind vectors and sonic temperature values should not be used when **usamples**, **vsamples** and **wsamples** are less than 10.

The [online field logbook](#) logbook has detailed information about sensor issues that were noted in the field.

Corrections

The following corrections have been applied to both datasets

- All horizontal wind components, **U** and **V** from 2D anemometers, and **u** and **v** from fast 3D anemometers, have been rotated to geographic coordinates, where **+U** is wind to the east, **+V** is wind to the north. These rotations are based on compass measurements of the anemometer orientations.
- The 3D sonic anemometers were installed as level as was possible, but not perfectly "bubble" level. The 3D wind vectors have been rotated to a coordinate system where the mean **W** component is zero, as described in [/content/sonic-tilt-corrections](#)

Time Representation

The **base_time** variable contains one value, the time of the start of the file, as a number of POSIX (non-leap) seconds since 1970 Jan 1, 00:00 UTC.

Values for each time-varying measurement will be found in the NetCDF files, as a variable with a **time** dimension of 288, the number of 5 minute periods in a day.

The **time** variable contains the time to be associated with each sample, in units of seconds since **base_time**. The values of time are the middle of the 5 minute averaging period, and have values of 150, 450, ... 86250, corresponding to UTC times of 02:30:00, 07:30:00, ... 23:57:30 of the day.

Dimensions

The NetCDF dimensions in each file are:

Dimension name	size	description
time	288	number of 5 minute samples in a day
station	6	index for the six ISFF stations at CASES99

Short Name Attributes

Each measured variable will have a **short_name** NetCDF attribute. The field before the first period in the **short_name** is a generic variable name, such as **T** for temperature, **Rsw** for short wave radiation, or **u** for the U component of the wind.

Heights

The height in meters above ground of the measurement, if appropriate, will be indicated in a second field after a period in the **short_name**, for example **RH.30m**

NetCDF Variable Names

The actual NetCDF variable names will have underscores, '_', in place of periods and single quotes. Therefore a variable with a **short_name** attribute **v.5m** will have a NetCDF variable name of **v_5m**.

Units and Long Names

Variables have a NetCDF attribute specifying the units of the measurement.

Missing Data

The missing data value is 10^{37} . A missing value indicates that the sensor was not reporting at the given time.

PROJECT WEBSITES

[Former Project Page](#)
[CASES-99 ISS Project Page](#)
[CASES-99 GLASS Project Page](#)
[Argonne National Laboratory Boundary Layer Experiment \(ABLE\)](#)

PARTICIPANTS AND MAILING LISTS

[PIs and Research Interests](#)
[Official Mailing List](#)

CONTACT INFORMATION

Principal Investigators:

[Ben Balsley, et al.](#)

Project Manager:

Data Manager:

[Steve Williams](#) NCAR/EOL



follow us



[Log In](#)

© 2016 UCAR | [Privacy Policy](#) | [Terms of Use](#) | [Copyright Issues](#) | [Sponsored by NSF](#) | [Managed by UCAR](#) | [Webmaster/Feedback](#)
Postal Address: P.O. Box 3000, Boulder, CO 80307-3000 • Shipping Address: 3090 Center Green Drive, Boulder, CO 80301

The National Center for Atmospheric Research is sponsored by the National Science Foundation. Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.