

# 30 Minute Flux Dataset

## Documentation of the ISFS 30 minute flux dataset for PCAPS

For general information about the operations of the Integrated Surface Flux Facility (ISFS) during PCAPS see <http://www.eol.ucar.edu/deployment/field-deployments/field-projects/pcaps/ISFS>.

The ISFS 30 minute flux dataset for PCAPS contains sensible and latent heat fluxes, friction velocity, total radiation and surface heat flux, as measured by the 7 NCAR ISFS stations during PCAPS.

The dataset consists of 4 small NetCDF files on the EOL CODIAC site, at <http://data.eol.ucar.edu/codiac/dss/id=233.002>.

- pcaps30m\_20101101.nc
- pcaps30m\_20101201.nc
- pcaps30m\_20110101.nc
- pcaps30m\_20110201.nc

Each file contains one month's data starting at the first of the month indicated in the file name

The missing data value is  $1.0 \times 10^{37}$ , indicating data is not available at the corresponding time for the given variable. The first ISFS measurements were recorded on Nov 10, 2010. Therefore, values for all time-series variables will be filled with  $1 \times 10^{37}$  for the initial portion of pcaps30m\_20101101.nc.

The variables in the NetCDF files are defined by one or more of the following dimensions:

Dimension name	size	description
time	1440 or 1448	number of 1/2 hour periods in the month
station	7	index for each of the 7 ISFS stations

The variables in the NetCDF files are:

Variable name	units	dimensions	description
base_time	seconds	none (scalar)	POSIX time, non-leap seconds since 1970-01-01 00:00:00 00:00 UTC of 0:00 UTC of the first day of the month
time	seconds	time	middle of sampling period, in seconds since base_time.
LE	W/m <sup>2</sup>	time,station	latent heat flux, positive is upward
H	W/m <sup>2</sup>	time,station	sensible heat flux, positive is upward
u_ (*)	m/s	time,station	u*, friction velocity
Rsum	W/m <sup>2</sup>	time,station	total radiation, positive downward, from pyranometer and pyrgeometer measurements at 2 meters
Gsfc	W/m <sup>2</sup>	time,station	surface heat flux, positive is upward
Gsfc_aux	W/m <sup>2</sup>	time,station	surface heat flux at auxiliary soil measurement sites of stations 1, 5 and 6

<b>Variable name</b>	<b>units</b>	<b>dimensions</b>	<b>description</b>
latitude	degrees-north	station	
longitude	degrees-east	station	
altitude	m	station	Approximate station altitude, above sea level
sonicHeight	m	station	Approximate height above ground of sonic anemometer and fast hygrometer eddy correlation measurements

\* By convention, NetCDF variable names are limited to A-Z, a-z, 0-9 and underscore characters. The usual name for the friction velocity is "u\*", which is converted to "u\_" as a NetCDF variable. See the "short\_name" attribute for each variable, which does not have a restricted character set.