Last Updated: October 23, 2013

Data Format Documentation

Instrument: Total Precipitation Sensor TPS-3100 (HotPlate), GCPEx Field Campaign

Overview:

A HotPlate precipitation sensor collected data at both the CARE and Sky Dive sites during GCPEx. This dataset consists of liquid precipitation rates and accumulations during both snow and rain. The dataset also consists of ambient weather conditions including solar and terrestrial radiation fluxes.

Data Organization:

The HotPlate dataset is contained within daily comma-separated value (CSV) files with the following convention,

gcpex_hotplate_[date]_[site]_[latitude_longitude].csv

where [site] = site name (e.g., CARE)
[latitude_longitude]=geographic location of instrument
(e.g., N363442.07_W0972640.90 is North 36°34'42.07" and West 97°26'40.90")
[date] = YYYYmmDD (e.g., 20110422)

and consists of ASCII formatted text containing the HotPlate measurements recorded every 10 seconds the instrument was operating normally (i.e., records with any system faults are not included).

File Format:

Level 2: (10 second records output by the instrument)

Format: ASCII

Format of each line:

Time (UTC;HH:MM:SS), output format version, instrument status, time since Epoch, current precipitation rate (mm/hr), total accumulated liquid precipitation (mm), ambient temperature (°C), instrument enclosure temperature (°C), wind speed (m/s), solar radiation (W/m^2), Net Infrared radiation from sky to ground (W/m^2), barometric pressure relative to sea-level (mb), temperature of relative humidity sensor (°C), relative humidity (%)

References:

Rasmussen, Roy M., John Hallett, Rick Purcell, Scott D. Landolt, Jeff Cole, 2011: The Hotplate Precipitation Gauge. *J. Atmos. Oceanic Technol.*, **28**, 148–164. doi: http://dx.doi.org/10.1175/2010JTECHA1375.1