

Ceilometer

One near infrared laser probes the sky vertically from ground to 15000 m. Targets like aerosol layers and clouds show up as echoes with certain backscatter intensity and signal extinction. Molecular absorption of as well as Rayleigh scattering by air molecules is negligible at a laser wavelength of 1064 nm. The CHM 15k works based on a photon counting method. Compared to analog measurement techniques, the benefits of this method are very high detection accuracy and sensitiveness which makes it particularly suited for applications with a small count rate. The distance from ground is calculated from the travelling time of the laser pulses. The Ceilometer saves all profiles from a single day in one file in netCDF-Format, using UTC as the time base.

The first Ceilometer from JenOptik (CHX090102) was installed in April 2010. After some improvements we changed this to a normal CHM15k-Version in 2011 (CHM090102, then CHM140102 and CHM170159) up to today.



Where to find the data

The daily netCDF-Files and the calculated CBH-dat-Files from the Ceilometer are stored under:
/pool/OBS/BARBADOS_CLOUD_OBSERVATORY/Level_0/3_Ceilometer/CH?XXXXXX/YYYY/MM/
The measurements of the Ceilometer are available since 2010 and a detailed overview about the data availability is given here:

http://bcoweb.mpimet.mpg.de/systems/data_availability/DeviceAvailability.html

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