

Processed data for the ACES study was calculated using the algorithm described in Caicedo et al., (2020). HDF5 files contain instrument attributes and final processed data products as follows:

Instrument Attributes:

Instrument	Instrument make and model
Number_of_profiles_in_file	Number of aerosol backscatter profiles in file
No._data_per_profile	Number of data points per profile (i.e. height range)
Missing_Data_Values	Missing data values are replaced with -9999
PI_Name	PI Name
PI_email	PI email address
Location_Name	Instrument Location Name
Location_lat	Instrument Location Latitude
Location_lon	Instrument Location Longitude
DM_Contact_info	Data Manager Contact Information
Revision	Revision version (R0 raw – Rn)
Data_Use	Disclaimer for data usage
Comments	Other comments

Data:

Altitude_m	Altitude variable in meters above ground
AvgProfile_bsc	10-minute averaged aerosol backscatter profiles
CBH1_m	Cloud base height 1 in meters above ground
CBH2_m	Cloud base height 2 in meters above ground
CBH3_m	Cloud base height 3 in meters above ground
MLH_m	Mixing layer height in meters above ground
MLH_stdv_m	Mixing layer height standard deviation in meters
NSLH_m	Nocturnal stable layer height in meters above ground
NSLH_stdv_m	Nocturnal stable layer height standard deviation in meters
Precip	Precipitation flag (0=no precip; 1=precip)
RLH_m	Residual layer height in meters above ground
RLH_stdv_m	Residual layer height standard deviation in meters
UnixTime.UTC	Start time for 10-minute bins in Unix Time UTC

*More information about the retrieval methodologies can be found in Caicedo et al. (2020).

Caicedo, V., Delgado, R., Sakai, R., Knepp, T., Williams, D., Cavender, K., Lefer, B., and Szykman, J. An automated common algorithm for planetary boundary layer retrievals using aerosol lidars in support of the U.S. EPA Photochemical Assessment Monitoring Sites Program. *J. Atm. Oce. Tech.*, under review.