

Input dataset

CBH (m)

cloud_base_height

Z_e (dBz)

Z_e

optional

LCL (m)

lcl

Rain at surface

flag_surface_rain

V_m (m s⁻¹)

vel

1) CBH processing

Initial smoothing

cbh_processing

- [1] clean & sort
- [2] split
- [3] merge
- [4] add lcl
- [5] smooth

Filling gaps

cbh_fill_method = linear
cbh_fill_limit = 60 s

2) Precip. & cloud detection

Range-gate mapping
Cloud base & top

Precip. & cloud detection

3a) Virga detection

Mask rain
mask_rain_ze = True

3b) (optional) Virga mask refinement

Clutter
mask_clutter = True

V_m

mask_vel = True

Rain at surface
mask_rain = True

Count valid data
minimum_rangegate_number > 0

smoothing

CBH (m)

cloud_base_height

CTH (m)

cloud_top_height

Precip. mask

mask_precip
mask_precip_layer

Cloud mask

mask_cloud
mask_cloud_layer

Virga mask

mask_virga
mask_virga_layer

characteristics

Cloud

cloud_depth

Virga

virga_depth
virga_top/base ...

Output dataset