New Parameters on ATL04 for Data Release 004

Group: /profile_x/surface_thresh – the threshold in photons used for surface detection

Group: /profile_x/surface_width – the width of the surface signal in bins (1-4)

Group: /profile_x/surface_conf – the confidence in surface detection

The above parameters are the result of implementing a new surface detection algorithm. It was discovered that the surface signal can extend over as many as 3-4 bins in areas of very rough terrain. The algorithm used in prior releases would often select the lowest of these bins as the surface height. This caused problems when looking for signal immediately above the surface. The new algorithm sets the surface bin (and associated height) to the top most bin in instances where the surface return spans multiple bins.

ATL04 Known Issues for ASAS V5.4

(Data Release 004)

The following lists the known issues with the ASAS version 5.4 (release 004) ATL04 atmospheric parameters. We are actively working to correct the problems for the next release.

/Profile_x

Backg_method1: This is the calculated background used in the subsequent Normalized Relative Backscatter (NRB) calculation. The background calculated for twilight data (solar elevation angles -7 to -1) can have large error. This can affect the NRB and subsequent calibration of the data.

Nrb_profile: In a region known as the South Atlantic Anomaly (SAA), enhanced detector noise causes elevated NRB values in nighttime data. This effect is not noticeable in daytime data.

Note for Nighttime data collection:

The ATLAS instrument performs calibrations that are used to optimize the altimetry retrievals during nighttime passes over parts of the oceans. During the calibration maneuvers, the atmospheric data are not collected. This results in areas where no data are collected as seen in

the figure below (white areas). This affects data collected prior to March, 2019. After this date the calibration strategy was changed which greatly reduced this problem.

2018/12 – ZN

0.0   0.2   0.4   0.6   0.8   1.0
Cloud Fraction

0.0   0.2   0.4   0.6   0.8   1.0
Aerosol Fraction