

## ATL16/17 Known Issues in Release 002

For ATL16, the weekly gridded products have many cells in the grid with no observations, mainly in non-polar grids. These grid cells are filled with an invalid value. This is due to the data coverage over a one week period and the grid cell size of 2x2 degrees which will be made larger in a future release. ATL17 does not have this problem.

**Global\_aerosol\_frac:** The aerosol fraction is thought to be somewhat low based on comparisons with CALIPSO. This is due to both missing the detection of thin aerosol mainly during daytime and misclassification of thin cloud as aerosol. We are working to improve the cloud/aerosol discrimination for future releases.

**Global\_cloud\_frac:** Global cloud fraction is good poleward of about 20 degrees N/S latitude. The ICESat-2 observational window only reaches 14 km high and in the tropical regions clouds above 14 km are not detected. Nighttime cloud retrieval is very good, but some optically thin clouds are not detected during daylight conditions due to high solar background noise.

**Npolar and spolar\_blowing\_snow\_freq:** Currently the blowing snow frequency plots are generated from the low rate (1 s) blowing snow data, which may at times show false positives due to ground clutter.

**Npolar and spolar cloud fractions** may be low during their respective summer seasons due to solar background noise. Also, during the Polar Stratospheric Cloud (PSC) season, the reported cloud fraction for the various height levels (low, mid and high) can be wrong due to PSCs above 15 km that have been folded down to lower levels (this is a problem caused by the high repetition rate of the laser).