

# Known Issues for ATL16 and ATL17, Release 005

**September 9, 2023**

## **Expanded global total column optical depth (parameter `expanded_global_column_od`)**

This is not so much a problem, but a comment on the scientific accuracy of this parameter. It is built by assuming that when a ground return is not found that this is caused by a cloud with optical depth greater than 3 and less than 35. The selection of what optical depth to use is based on a random, normally distributed number from 3 to 35. A future release will improve upon this by using satellite-derived measurements of cloud optical depth distributions as a function of latitude.

## **The South Polar Diamond Dust Frequency (parameter `spolar_surf_ddust_freq`)**

This is a new parameter in release 005 and is the frequency of occurrence of diamond dust that touches the surface over Antarctica. Along and near the trans Antarctic mountains and especially around longitude 165E and latitude 70-75S, the frequency is anomalously high due to ground signal contamination.