

Known issues in ATL14 and ATL15, release 003

- 1. Ice-front advance and retreat.** (see ATBD section 2.1.3.) The ATL14/15 products are intended to provide surface-height estimates for the ice sheet, and not to include the surface-height changes that happen with ice-shelf fronts advance and retreat (i.e. between the height of the ice-sheet surface and the water as the ice front moves.) A time-varying mask has been applied in Antarctica that covers the major ice shelves through the first quarter of 2023, with less reliable coverage for Greenland through the end of October 2021 and for smaller Antarctic shelves.
- 2. Near-Grounding Zone Tides.** (see ATBD section 2.1.3.) The ATL14/15 products are corrected for the effects of ocean tide fluctuations using tidal constituent outputs from regional tide models. Within grounding zones, ice flexure occurs as the ice transitions from a fully grounded state to a floating state in hydrostatic balance with the ocean. The ATL14/15 Antarctic products include a correction factor applied to the tide model in Antarctica around the edges of the Ross and Filchner Ronne ice shelves, but surface-height change estimates are still less accurate near grounding lines than they are in other parts of the ice shelves. For Greenland and for smaller Antarctic shelves, no such flexure correction has been applied, and grounding line elevation variations should be treated with caution.
- 3. Data density in cycles 1 and 2.** (see ATBD section 3.2.) The heights in cycles 1 and 2 come from crossovers between the data in these cycles, which were not measured on the reference ground tracks, and data from the other cycles, which were. As a result, the data density is much smaller for cycles 1 and 2, and the products are generally less accurate and less able to measure details of the height-change field.
- 4. Overlap between Antarctic subproducts in the 40-km subsampled product.** The four quadrants of Antarctica overlap by one pixel in the 40-km subsampled ATL15 product. The higher-resolution versions of the products should have no overlap at the edges.