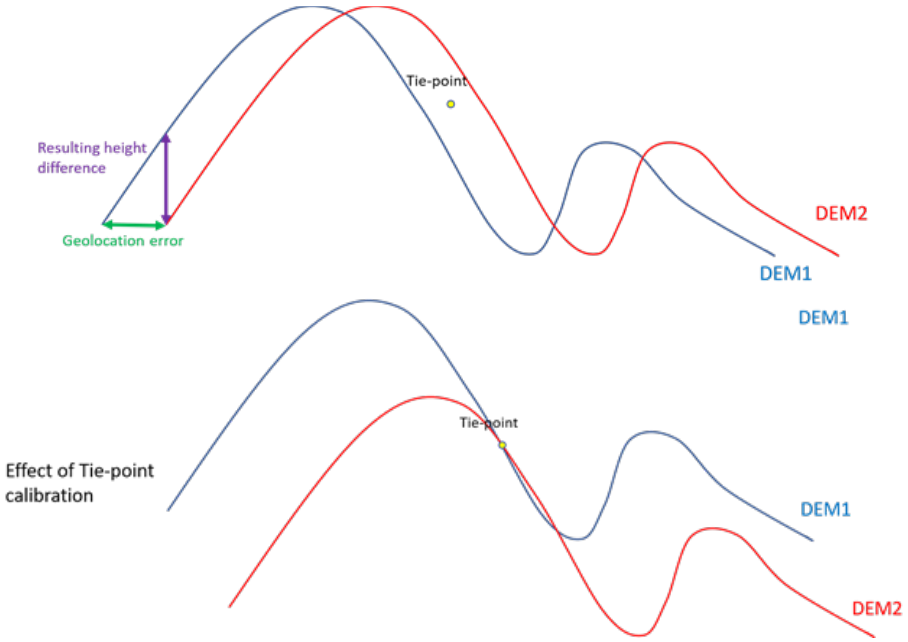
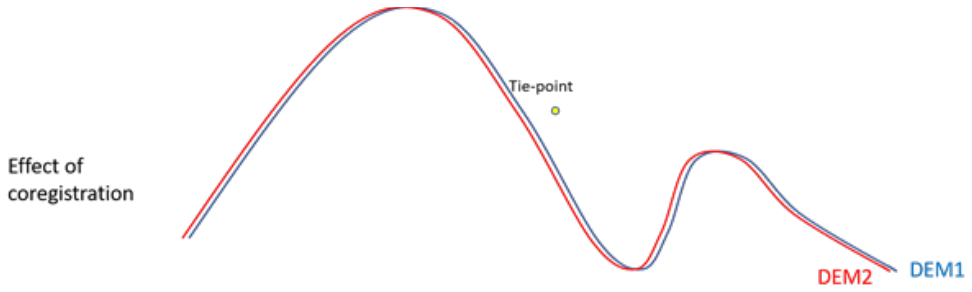
This paper provides a short communication presenting velocity and surface elevation changes over Thwaites glacier in Antarctica. Despite the presented data range between 2012-2020, new results are related to the period 2017-2020 only. The main finding of the paper is related to the underwater cavity found in previous studies at the main trunk of Thwaites glacier. The authors claim that melt at the cavity stopped during the period 2017-2020. However, these findings are only based on InSAR surface elevation changes which is typically 10 times less accurate than altimeter based surface elevation measurements. DEM only based results can be misleading when adopted for calculating melt rates and grounding line retreats without supporting data such as DInSAR or RADAR sounders.
The authors also do not explain the methodology used for calculating melt-rates (as an example in figure 2 ice bottom crosses the bedrock). This lack makes it hard to evaluate the results. Some statements seem to be overly speculative (see comments below) and are not proved or confirmed using independent and complementary measurements.
These issues reduce my overall confidence in the main results. The presentation is also unclear at times. I suggest major revisions are required for readers to have confidence in the reliability of results and the conclusions that are presented.

Line 45 – "We tied the adjacent DEMs to their cotemporal neighbours using a point within the scene overlap. By choosing this point over a relatively flat region, height errors resulting from geolocation errors were minimised"
It is not clear to me why the authors need to coregister adjacent DEMs if they use IceSAT for calibrating the single tile. Moreover this approach, if not performed correctly might lead to errors related to geocoding or mi-registration (see schematics below). Hence a single tie point seems to be a weak approach for tackling this problem.





54-55 “Small tidal Ranges” of 0.5 meters would correspond to abut 5 meters of difference when considering multiplying by the flotation factor. This factor should be taken into account if you are looking at grounding zones or a more solid justification of why this was not taken into account should be provided.

65 Why do you need tie points described on line 45 if you can calibrate data with icesat?

69 TerraSAR-X SLCs (2012–2014) why only this period and not the entire dataset? Moreover, you can do pixel tracking with DEMs itself if pairs far apart in time are characterized by Low SNR levels in the Pixel Offset maps.

73 What does sampling every 100 m means? Do you pick a cross-correlation window every 100 m (for Sentinel) and 40 m for (TSX)? What are other parameters like Window size and widow search used for different sensors? Depending on the used parameters the velocity maps will have different accuracies

79 It does not look like there is good agreement betweem the DEM based results compared to the GL west the grounding line (Fig 1.a). The TDX backscatter intensity covers the elevation of floating areas. How the DEM derived grounding lines have been obtained has not been explained anywhere in the manuscript. This part requires an extensive rewriting.

85-89 This statement is not supported by the data since the DEM based Grounding lines are 2 orders of magnitude less sensitive compared to the InSAR based Grounding lines. This also is shown in Figure 1a West of thwaites main trunk where no grounding line is detected by the “DEM based” grounding line. As explained in Milillo et al 2019 a grounding line retreating could show up as a surface uplift simply because bending forces at the grounding line get released once the grounding line retreats. This effect would alter height above flotation calculations together with the fact that the grounding line is not in hydrostatic equilibrium. Since you are not comparing Grounding lines obtained with the same measurements this statement seems too speculative.

90-92 This sentence is not supported by any data in the manuscript. How do you identify the cavities? This seems to be part of the discussion and not of the results.

109 how do you calculate the cavity volume? This is not explained in the manuscript

129-130 This sentence is not supported by observations or data and seems overly speculative.

Figure 1a Instead of surface elevation please show height above flotation since you are comparing grounding line measurements. Add legend with Grounding line acquisition dates

Figure 2 Despite the nice colorbar It seems counterintuitive to look at the bottom of the ice extending below the bedrock level. Since no methodology for retrieving these thickness change measurements has been described it is really hard to evaluate this figure and comment on it.