Comments for ESSD-2020-340

General comments:

The manuscript presents a 14-year Antarctic Iceberg calving dataset using satellite remote sensing dataset. The calving events were detected based on the manual digitalized coastline and the simulated coastline using ice velocity. Then the number of calving events, calving areas, mass, and their uncertainty are derived. Afterwards, the spatial distribution and average calving rates for different ice shelves were obtained. I think the dataset is of great significance for relevant studies in Antarctica. However, my **main concern** for the dataset and discussions is regarding the uncertainty brought by small scale calving events and the accuracy of ice velocities.

In the manuscript, the calving areas and events were based on the difference between digitalized coastline and the simulated coastline using ice velocity. The authors also indicated that the velocity product has an error of 3.96+-4.09 km, which should have a significant influence on small scale calving events (1-10km^2). However, the uncertainty introduced by ice velocity was not analyzed in the uncertainty assessment, and those calving events with high-uncertainty were also not excluded from the following discussions and analysis. These may raise wrong conclusions. For example, would this affect the conclusion that the authors indicated that after 2015, there are more obvious calving events than the year before, and majority of them were small scale calving events. You may estimate the confidence level according to the events.

Minor comments:

1. P2, L55, the authors grouped the state of arts by different spatial resolution, not by the detection method?

2. P6, Section 3.2, it's not clear here why August 2005, 2010 and 2015 were used as the input benchmark. According to the descriptions in this section, every year's actual coastline modified from last year's extraction was used as the input of next year.

3. P8, L 178, to my knowledge, Bedmap2 may not provide thickness data in some of the coast areas, how do you deal with such situation.

4.P 10, Section 3.3.3, this section is not clear, how to define the center point, the perimeter

of a calving area? Line 224-L228, this paragraph is confusing.

5. P10, L230, the iceberg calving events were divided into two types, high frequency and low frequency; it seems contradictory with calving frequency (Table 4). Is calving frequency means the number of calving events in every year?

6. P11, Table 4, please also include the standard deviation for the calving areas.

7. P 12, add standard deviation in section 4.2.

8. The calving events with high uncertainty should be excluded or discussed separately in Section 5.