

The authors have answered all my questions sufficiently and after restructuring the manuscript now is very clear and easy to follow. I have only a few remaining minor comments:

l.166 „GNSS data ... were handled“: Please modify, e.g. „GNSS data ...were processed“

l.174 „These crossovers are the intersections of tracks by the snowcat during instrument installations, observations, and overnight breaks.“ To clarify, I suggest a little modification: “...are the intersections of tracks by the snowcat which occurred usually during...”

l.188 „Tide-free“ elevations are a convention. Applying all tidal corrections do not necessarily mean that the elevations are tide-free. However, Neumann et al. 2019 (p.111) informs that the elevations are given as „tide-free“.

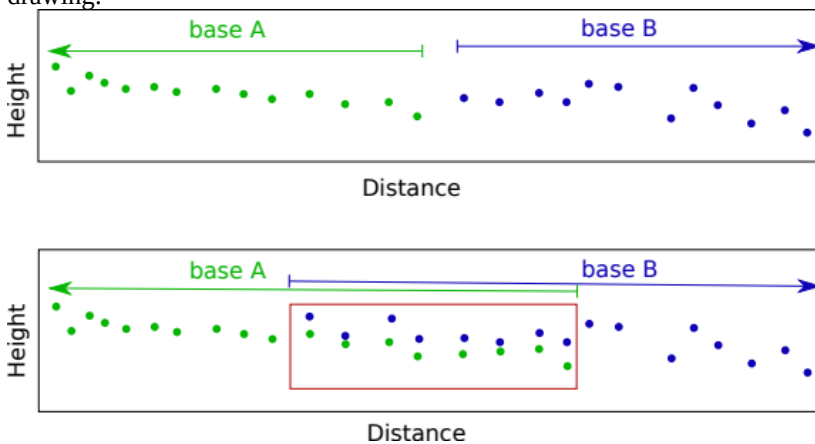
l.253 Why did you choose 30 as a number of sufficient pairs? If the ICESat and GNSS profiles are perpendicular, there can be 2 GNSS points and ~11 photon locations within a radius of 4m around the exact crossover location, which gives only 22 pairs. In this case, a perpendicular crossover would never be sufficient.

l.338 Please add a short notice about the reason for the significantly lower accuracy at Taishan here.

Furthermore, I have two suggestions for future works but I do not expect them to be included in this manuscript:

1. Concerning crossovers in the kinematic profiles, those mentioned at l.174 are within very short time differences, which implies that temporally correlated errors are similar in both segments. Do you also have any crossovers between the inbound and the outbound profiles? If not, this could be considered when planning such traverses in the future. Furthermore, you could install GNSS equipment on 2 independent snowcats and analyze crossovers between them.

2. You did a quite interesting analysis in response to my suggestion to use overlapping sections to assess the accuracy. However, there seems to be a misunderstanding. To make my suggestion more clear I will explain it with a small drawing:



The upper part shows how you processed a section of the profile with a specific base station. I suggest to include some more observations to each section as in the lower part. This means that there is some overlap between the profiles (the observations in the red box) of different base stations. Now you can use the resulting coordinates in this overlap to analyze the accuracy and precision by calculating the mean offset and standard deviation between these different coordinate solutions.