



Comment on **essd-2021-91**

Anonymous Referee #2

Referee comment on "Airborne ultra-wideband radar sounding over the shear margins and along flow lines at the onset region of the Northeast Greenland Ice Stream" by Steven Franke et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-91-RC2>, 2021

This manuscript presents a high-resolution airborne radar data set (EGRIP-NOR-2018) for the onset region of NEGIS. We found that the authors have used this data set to produce and publish the gridded ice thickness and bed topography data as well as the TWTs of the ice thickness along the radar profiles in the onset region of NEGIS, which constitute important boundary conditions for numerical model. Even so, the data presented in this manuscript is of exciting importance. From it, we can also derive the characteristics of isochronous layer to reveal the historical properties and processes of the NEGIS, especially when combined with ice core data. There are, however, major issues with the manuscript that would be valuable to address.

First, the data set is not accessible via the given identifier in the paper (<https://doi.pangaea.de/10.1594/PANGAEA.928569>) may for it is still under review (it shows "The rights given by your login do not allow downloading of dataset #928569. Please login with another user name!"). As a result, I have not been able to assess whether the data set meets the requirements of the journal.

Second, "line 63" says "unique airborne radar data". I think it is a needless over-assertion which weakens the credibility of the authors and manuscript. Does IceBridge have any observations in this area? If so, I think the authors should make a cross-comparison with IceBridge to validate the data set. If not, can use crossover analysis to validate the data set. In addition, can the authors give the calculation and accuracy of GPS and INS in this manuscript? From the manuscript, they have an important impact on the accuracy of the data set. In a word, I think the accuracy evaluation of the data set is not enough.

I made some specific comments and suggestions below, which I hope will help improve this paper.

L175: What does "ki" mean in equation 4?

L182: What does "kt" mean in equation 5?

Figure 3 "C1,2,3" should be "C1-C1', C2-C2', C3-C3'", keep the same with Figure 1