

Comment on **essd-2022-68**

Anonymous Referee #3

Referee comment on "Microwave radiometry experiment for snow in Altay, China: time series of in situ data for electromagnetic and physical features of snowpack" by Liyun Dai et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-68-RC3>, 2022

In this manuscript, a set of long time series microwave radiation snow observation experiment data obtained in Altay region of Xinjiang during the 2015/2016 snow season were described and discussed in detail, including the test area overview, measurement methods, data arrangement and preliminary result analysis of measurements. This is a very comprehensive and unique measured dataset, these datasets including: microwave brightness temperature data with dual polarization in three bands, snow characteristics data, four-component radiation observation data and meteorological observation data, etc. According to the preliminary result analysis of the measured data, this set of data has very high measurement quality, which is of great value for the better input of snow model development, the verification of simulation results and related snow application. The full text is written in standard English, logical and fluent, with good readability.

However, there are the following related issues need to clarify or modify:

- The standards or specifications for this experimental implementation can be supplemented;
- Please describe and supplement the measurement error analysis and data quality control method of the datasets in detail;
- If possible, some practical application cases study related to this dataset can be added.
- Page 1: "Involution Processes" should it be "evolution processes"?
- The literature of Dai et al., 2021 is mentioned in the paper, but only the literature of Dai et al., 2020 is found in the reference at the end of the paper, please check.
- In Line 186-189, there are two brightness temperature values in the two polarization of 1.4ghz, and only one value in the two polarization of the other two bands. Please check whether they are correct.
- Section 4 "Overview of collected Data from IMCS", could it be "Overview and preliminary analysis of collected data from IMCS"?

Based on above comments, this manuscript can be accepted after minor revision.