Comment on essd-2022-155
Anonymous Referee #2


In this work, the authors propose a new multimodal benchmark dataset for remote sensing. There are two main contributions: 1) a new multimodal benchmark data, named MDAS, consists of five modalities: SAR data, multispectral image, hyperspectral image, DSM, and GIS data; 2) three typical remote sensing applications in the MDAS dataset are conducted with the state-of-the-art (SOTA) algorithms. Apparently, the MDAS dataset is well-prepared by experienced experts with high quality, being useful for various applications. This paper is well written in general with clear motivations and nice illustrations.

Here are some suggestions for major modifications.

- In the section 1-introduction, this paper has listed different datasets in the three typical fields to reflect the advantages of the MDAS dataset, but the MDAS is not limited by three applications. If a summary table of different datasets is attached in the section 1, it would be more intuitive to reflect the differences between the MDAS and other datasets. It is recommended to analyze from the perspective of data type, covering area, acquisition difficulty, etc.
- In the section 2.1-synthetic aperture radar data, the information of SAR data needs to be introduced more detailly. The SAR data after processing is the backscattering coefficient or some other format? Is the SAR data range between 0 and 1 or is it converted to dB? Whether is the SAR data processed after speckle denoising? How to the SAR data in the experiments? Particularly, speckle noises have a great impact on remote sensing applications. These details need to be further introduced.
- In the table 1, it is necessary to list the resolution and band number of all mentioned data and labels, because the MDAS involves a lot of data processed by software.
- In the section 3.1-super-resolution, the evaluation metrics have PSNR, and the optical data are all the BOA data, which range from 0 to 1. For the convenience of storage, the BOA data is always uint16 format from 0 to 10000. In the experiments of super-resolution, this paper used the original data from 0 to 1, or max-min normalize the 0-10000 data to the uint8 format from 0 to 255. If the original data of 0-1 is adopted,
the PSNR will be large, and it is better to use RMSE.

- In the section 3.3- multimodal land cover classification, this paper only compares the results of the same algorithm (2015) under different data input. This comparison is convincing. But the previous two fields are the results of some SOTA algorithms in recent years. This part needs to increase the comparison experiments of different SOTA algorithms in the multimodal land cover classification.

- Readers may be interested in whether the MDAS dataset can be applied in some other directions in addition to the above-mentioned three applications. And the mentioned SOTA algorithms, especially the deep learning model trained on this dataset can be applied in the any other area. These issues should be discussed.