Comment on egusphere-2022-725
Anonymous Referee #2


This paper presents a new technique to identify the electrical signal under the impact on spacecraft. The authors demonstrate that the recently recognized machine learning technics are useful in identifying the typically nonlinear shaped dust signals. The idea is new and worth the publication. Please consider the following questions/comments before publication.

Please address the capabilities of the methods in terms of the signal’s lifetime and amplitudes. In case the machine learning method is replaced instead of the current onboard dust detection algorithm, does this method works for the different lifetime of the dust signals, for instance?

Section 3.4.1 Feature Extraction: Please compare the two features selected in this study and the dust detection algorithm employed onboard TDS.

Figure 4: How is the ’decision line’ defined?

Figures 4 and 5: Is the similar classification confirmed for the CNN results as well?

Figure 9: What are the highlighted area in a-i)?
Figure 11: Both SVM and CNN dust detection seem to have a local minimum around the perihelion, while TDS results are largely scattered and have a maximum around the perihelion. Is there any explanation for this?