EGUsphere, referee comment RC1
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Comment on egusphere-2022-725

Anonymous Referee #1

Referee comment on "Machine learning detection of dust impact signals observed by the Solar Orbiter" by Andreas Kvammen et al., EGUsphere,
https://doi.org/10.5194/egusphere-2022-725-RC1, 2022

Reviewer's report on "Machine Learning Detection of Dust Impact Signals Observed by

The Solar Orbiter" by Andreas Kvammen1 et al., [Preprint egusphere-2022-725]:

Summary:

The authors presented two dust detection tools "that can be used to automatically process the large amount of data acquired by the Radio and Plasma Waves instrument on board the Solar Orbiter." The two methods presented show stable performance with small errors, indicating that these methods are both suitable for the dataset. In general, I have found this paper well written, and suitable for publication in the ANGEO after some minor comments taken care of.

Minor comments:

P2, L24-29: It may be used again but adding a reference here would be better.

P2, L37, "interstellar dust population within…"?

P5, L140: the references are given, but I still suggest the author to add a bit more details about the algorithm. For example, the range of amplitude and bandwidth seem not lengthy to be added. The Figure 6i event is identified as dust because the frequency is not considered in the SVM? Also, will Figure 1c yield a negative ratio on item 2? These seem important to help the audience to understand the performance of SVM on some not-so-typical events.

P12, L255, "Figure 6 focuses mostly" on …?

P13, Figure 6 caption: "this can possibly be explained a weak…" ? Also, I assume that they are all 15 sec intervals, same as all such figures?

How many computation resources are used for the two methods? Is it trivial or expensive?

The conclusion of the paper is that both methods work. The error improvement of CNN vs SVM presented seems trivial. In addition to the slight accuracy improvement, is there anything else to help a user choose which method to use?