Reviewer 1 Comments and Response

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

Appropriate references are added in the revised manuscript

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

The word "dust" was erroneously added twice in this sentence and is now removed in the revised manuscript-

P5, L140

1. ***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.***
2. ***The Figure 6i event is identified as dust because the frequency is not considered in the SVM?***
3. ***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.***

1. A more detailed description of the TDS classification is now added to section 2.2. The amplitude threshold is also discussed in section 2.1 in the revised manuscript.

2. The Figure 6, subplot i) title had a mistype, it was titled as *dust* but should have been titled as *no dust,* this is now fixed in the revised manuscript.

3. The SVM will not have a negative convolution ratio since we only use the absolute value of the convolution. This is described in detail when we describe the SVM feature extraction routine on page 10, item 2.

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

The word "on" was missing in this sentence and is now included.

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?

The word "by" was missing in this sentence and is now added in the revised manuscript. We have also included text to Figures 6 and 9 to highlight that the signal framing are all 15 ms intervals.

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

We have included a description of the computational resources required to train the SVM classifier (in subsection 3.4.2) and the CNN classifier (in subsection 3.5.2).

In addition, we have included a discussion on the computation time needed to classify "new" observations with the SVM and CNN models at the end of subsection 4.1.

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?

The CNN has the highest performance across all evaluation metrics. The performance advantage over the SVM/TDS classification methods is statistically significant, as shown in Table 1, we therefore suggest users to use the proposed CNN model (or a similar CNN architectures). This is now written explicitly in section 4.1. Otherwise, we can not see any significant difference between the CNN and SVM methods, both seem stable and appropriate.