



EGUsphere, referee comment RC2
<https://doi.org/10.5194/egusphere-2022-4-RC2>, 2022
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Comment on egusphere-2022-4

Anonymous Referee #2

Referee comment on "A study on the effect of input data length on a deep-learning-based magnitude classifier" by Megha Chakraborty et al., EGU sphere,
<https://doi.org/10.5194/egusphere-2022-4-RC2>, 2022

"general comments"

This paper is trying to develop rapid magnitude classification method by using Deep Learning. This topic is important for rapid threshold warning in EEW. The objective, data, results are fairly documented while the reviewer has questions described in the specific comments section.

"specific comments"

Comments for the last paragraph in 'introduction':

The authors said boundary of low and high magnitudes are arbitrary chosen and does not influence the model performance. However, the reviewer think boundary selection could affect the performance, because the faulting process become more complex for larger earthquakes so that initial P-wave does not necessarily has large amplitude during the P-wave trains of the larger earthquake. In the paper, analysis durations does not affect the results, but this results are only examined for the magnitude boundary of 5.0. If the boundary shifts larger (like 7.0), analysis duration could affect the performance, although such analysis is difficult for STEAD.

Comments for the description of data used:

Are there any selection criteria in source-to-site distance and station?

STEAD includes from small to large distance data. In the scheme of the paper, the station(s) nearest to the epicenter seems appropriate for the analysis, because the rapid warning is the purpose. Please add description of selection criteria for distance/station if exists. Also, please add distance distribution like Figure 1 irrespective of existence of the criteria.

The reviewer is wondering that use of large-distant records increase the difficulty of classification, because such record become very complicated waveform due to the propagation of long distance in complex media.

Comments for Model Architecture:

Please describe why the authors choose the model architecture in Figure 3. (Please explain how each part contributes.)