

Response to Reviewer 4 Comments

Dear editor and reviewer,

I am very grateful to your comments for the manuscript. All of your suggestions are very important. They have important guiding significance for our paper writing and scientific research work. According to your suggestion, we revised the relevant part in manuscript. Some of your questions were answered below.

Point 1: Avoid lumping references, e.g. 12-14 and similar. Instead summarize the main contribution of each referenced paper in a separate sentence and/or cite the most recent and/or relevant one. The authors should also consider adding there a couple of more recently published results in the field, e.g.

Response 1: We have avoided lumping references and summarized the main contribution of each referenced paper in a separate sentence.

Dhamande et al. [12] proposed new compound fault features, extracted from continuous and discrete wavelet transform of vibration signal. It is found that these features have excellent diagnostic potential. This paper provides a new idea for composite fault diagnosis, but due to the limitations of the wavelet transform, it has not achieved ideal results. Yu et al. [13] proposed an improved morphological component analysis (MCA) method for the compound fault diagnosis of gearboxes. This method selects the optimal dictionary from the limited wavelet candidates, which restricts the generalizability of this method. Compound fault diagnosis is a difficult problem in the field of fault diagnosis, and it is also an urgent problem to be addressed [14].

Thank you.

Point 2: The authors should more clearly explain why they use spectral negentropy for their problem and why this method turns out to be more accurate than some others.

Response 2: We explain this in more detail in the conclusion.

Compared with spectral kurtosis, spectral negentropy can extract fault features more accurate in the presence of impulsive noise. When it is used to detect whether there are obvious faults in the signal, the spectral negentropy is more stable and reliable.

Thank you.

Point 3: Why did the authors choose this dataset to test their technique and not some other which contain much more data? Are there any other methods tested on this dataset and their results published? If yes, please compare those results with the results of the method presented in the manuscript. Have the authors tested the method for some other motor frequencies and how it performs in that case?

Response 3: Due to the limited resources, this paper only analyses the compound fault of inner and outer rings of rolling bearings. We attempt to combine FEWT and spectral kurtosis to diagnose compound fault by cyclic extraction, which is not ideal compared with the results in the manuscript. The method proposed in the manuscript can still achieve good results at other motor frequencies.

Thank you.

Thank you again for your advice. I hope I can learn more from you.