Interactive comment on "Indications for different types of brittle failure due to active coal mining using waveform similarities of induced seismic events" *by* S. Wehling-Benatelli et al.

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The ability of mining seismologists, to recognize the location of mining tremors from their waveform similarity, is well known. In the paper entitled "Indications for different types of brittle failure due to active coal mining using waveform similarities of induced seismic events", the above mentioned ability is turned into an algorithm and computer program. A three-component similarity matrix and station matrix are constructed on the base of the correlation coefficient between seismic data recorded in a seismological network. The structure of the matrices can be used for identification of seismic event clusters based on waveform similarity. Seismic records from the Hamm-Herringen re-

gion, occurring in the vicinity of a moving long-wall, were used for testing the program. Several large clusters of similar waveforms, temporary and space consistent, have been identified and three different types of seismic source mechanisms have been recognized. The obtained results are original, interesting and can be applied in many mining seismic centers. The results should be published. However in my opinion some additional information can improve the paper. Description of similarity matrices P663 line 4 The similarity of two rows is presented along with the question What next? The further procedures isn't following The main element of the paper should be described preciously. This remark is also relevant in description of station matrix.

Spectra The similarity of waveform should be visible also in the similarity of waveform spectra. The interpretation of spectra similarity is simpler and could strengthen the final conclusions of the paper. Geology The important missing information is geological structure in the region of investigations. The geological and mining situation in the vicinity of the long-wall is the main factor determining the level of seismicity. Strata, mechanical properties of the rocks, tectonics, and edges in seams over the exploited long-wall are all important elements in determining the differences in the seismic emission. Without this information the conclusions in the paper are not convincing. Network The method used for installing the sensors, accuracy of the hypocenter locations and the energy estimations, would be helpful in assessing the differentiation of the similarity catalogues. Velocity The differences between the catalogues can also be due to local velocity changes as a result of an increase in stresses. The velocity and attenuation of seismic waves can change markedly as a result of changes in stress levels

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