Review of manuscript
Event couple spectral ratio Q method for earthquake clusters: application to North-West Bohemia by Kriegerowski et al., submitted to Solid Earth.

This is a novel study proposing and testing a new method for determining attenuation in the fault zone using spectral ratio of adjacent events, which works above the earthquake corner frequencies to remove dependence of spectra on the size of the events.
After synthetic tests the method is applied to the seismograms of the West Bohemia 2008 swarm. Rather large scatter of the resulting Q factors is found, which is discussed and attributed to possible scattering in the focal zone. It also appears that the method requires high quality data, so application to later seismicity in the area with denser recordings looks a promising way to improve the stability of the results.
Before accepting the study I recommend to better describe the method, the used data (space distribution of the hypocenters), the synthetic tests and improve the discussion. All unclear points are indicated below.

Questions/suggestions

- P3: the Method is described in a rather confusing way. Some examples:
  – t* in Eq(1) is different from t* in Eq(3). Instead t^*_{ij} should be in Eq(1) and $t^* = t^*_{i0} – t^*_{i1}$ in Eq(3)
  – what do you mean by saying 'spectra S0 and S1 are similar' – I think they should be identical so that Eq(3) holds. To make it clear refer to 'below' where this is clarified
  - there is a mistake in Eq(3): logarithm is missing in front of G_0/G_1
- Fig. 2: the hypocenters are not visible: what about plotting them in the upper layer?
- P5/14: Please specify how are the upper frequency limits corrected to account for the Fresnel volume
- P5/23: The position of the blue points in Fig 3 is not clear; they do not appear to show the ray density or a similar parameter, because the rays cannot pass through these points. Please explain or correct.
- P7/3: Which three requirements do you have in mind? I have found only two in the preceding text
- P8: Please explain the difference between synthetic traces in Figs 5, 6 and 7. It is not clear which source time functions were used to generate Fig. 5, 6 and 7. Were these magnitude-dependent in Fig. 7 only?
  And what about Green functions? To my understanding, the synthetic traces in Fig.5 are computed using 1D model, which means (to my understanding) that the source time functions have been convolved with the appropriate Green function. So what is the difference in data for Figs 5 and 7?
  Possibly only two instead of three figures are necessary here?
- There is no reference in the text for Fig. 9
- Fig. 10: The swarm locations shown on the map look rather scattered – are these indeed the HypoDD locations you have used for the analysis?
- Fig. 11: How did you determine the incidence angles: from ray tracing or these are measured from the seismograms?
- P11/10: that larger -> that for larger
- P11/17: I think that the sentence "This trend is mostly dependent…" is not necessary
- Fig. 13: It would be more suitable to use a kilometer scale on this plot. Besides, the gap at 50.211 latitude appears enigmatic. I believe this plot should be station independent, because it shows coordinates of the events, so it should be visible at both the stations. Even if different events would be used at different stations, at least some indication of the gap should be visible also at

LBC, provided there is some overlap between the event sets. Could you please show the vertical section of used relocations in order to identify the origin of the gap?

- P12: I am not sure if only scattering is responsible for the reported waveform complexity at NKC. It could be caused by different effects. One of these could be the proximity to the nodal line, where the P-onsets are usually of emergent nature and later arrivals are more visible. The data shown however look quite impulsive, which could indicate that the two mechanisms have different nodal lines, which not close to the NKC projection. Another reason could be overlap of waveforms with opposite polarity, which makes the image more complex.
- P13/6: Here it would be helpful to discuss more the different ray direction and coverage of the focal zone for NKC and LBC as visible in Fig. 2, which could affect different sensitivity of the stations to attenuation.
- P14/1-8: It would be suitable to refer here to the study of Wcislo et al (2018) who obtained similar Qp and Qs using different method on the same data. Mentioning this in Conclusions is too late; BTW Conclusions usually do not contain citations.

Minor points

- Fig. 2 is referred only after Fig.4 on page 5
- P5/12 attenuation -> attenuated
- P10/10 (right) is superfluous