



Interactive comment on “Some possible correlations between electro-magnetic emission and seismic activity during West Bohemia 2008 earthquake swarm” by P. Kolář

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Received and published: 28 June 2010

Answers to RC C35

add 1: the duration of “microphone effect” pulse was only few seconds and such frequencies can’t be observed in (wavelet) spectrum calculated for sampling frequency $dT = 1$ minute (i.e. used interval of average amplitude of signal).

add 2: at very beginning of data analysis we were seeking for (electromagnetic) signals directly generated during an earthquake rupture process. Such signals however were founded neither in observed signals, nor in their summation, nor in wavelet spectrum of summed signal. More precisely, there were observed some abnormalities in

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wavelet spectra, however they appeared to be unstable when processed time interval was changed. Therefore we classified them as random artifacts, rather than real effect.

add 3: no, it means that wavelet spectrum level fits 0.95 statistical significance – for more detail in the quoted works Torrence and Compo (1998) or Wavelet (1998).

add 4: we analyzed Z component of the seismograms

add 5: STA/LTA – ratio of Short Time Average / Long Time Average – a standard way used in seismology to determine occurrence of signal in (noisy) seismogram. The algorithm can deal with slow increase of noise level in the data, on the other hand in its simplest form it can’t handle together with different types of signals as e.g. teleseismic events versus local ones. In the present work time windows $LTA=100$ samples and $STA=10$ samples were used.

add 6: extremes in STA/LTA ratio correspond to presence of a signal in the EME data, however the source of the signals is not known. We can only speculate that it can be somehow connected with the course of the earthquake swarm. On the other hand we made an additional analysis – we processed magnetic measurement (of 1sec sampling) from magnetic observatory Budkov (cca 170 ES from station Nová; Kostel). The Budkov data were processed in the same way, the result is in (new extended version of) Figure 5. It follows from the figure, that the observed extremes do not coincide with those ones in Nová; Kostel, therefore they are not of global origin. Of course this analysis can’t confirm or deny their “earthquake” origin, there still rest possibility that they can be generated e.g. by a local industry source, etc.

Thanks to the reviewer to helpful and reasonable comments.

Interactive comment on Solid Earth Discuss., 2, 145, 2010.

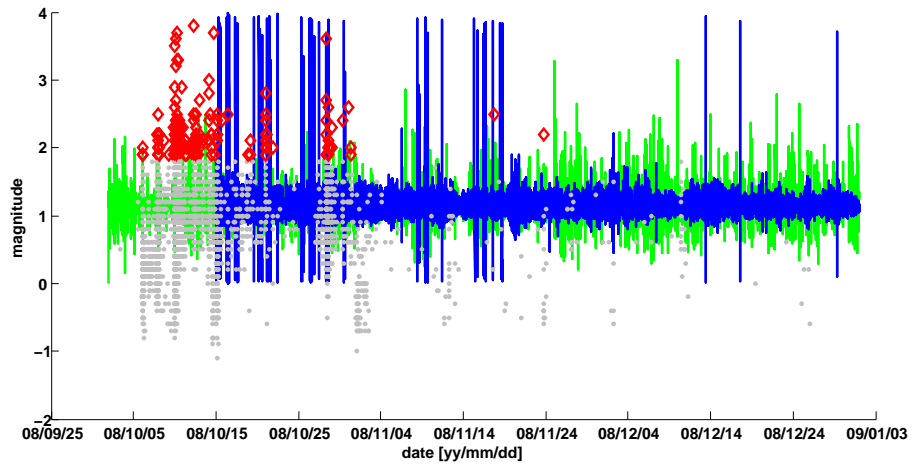


Fig. 1. Revised version of Figure 5. To exclude influence of global sources, data from Budkov station are plotted (green line).