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ALTERNATIVE MECHANISMS OF THE MICROSEISMS EXCITATION

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The present poster brings information about the gradual obtaining new properties and features of secondary microseisms in the frame of long-term continuous observations and data interpretations. All efforts were firstly aimed at finding and clearing up various sources of these long-period microseisms. Our first experiments started with observations at the Ostrava (OKC) broad-band seismic station, when windstorms Kyrill and Emma were observed and subsequently analysed (Holub et al. 2007 and 2008). Further development of our special interpretation approach was extended by using broad-band data recorded at the foreign seismic stations. Their selection was performed on the basis of the world seismological data centres IRIS and ORFEUS.

The annual drift is typical for microseisms. We propose the model based on the generation of thermoelastic waves, which manifest the highest microseisms during winter by higher stress level in the same time. If we remove the average influence of the stress background from the microseisms, we obtain the residua of microseisms, which show the semiannual periods with maxima in March and October. The histogram of occurrence of anomalous microseisms has the same form as the variations of Length Of the Day (LOD). This mechanism was recognized as a secondary order mechanism after the annual drift. The synoptic situations and earthquakes were recognized as imminent triggers of anomalous microseisms. This synoptic situation is consistent with the uplift of northern part of Europe after the ice cup melting.

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