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ON THE PHYSICS OF THE SEISMIC GAP EFFECT

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Abstract

During the study of microseismic fields and electromagnetic radiations variations during the preparation and occurrence of a number of earthquakes of different intensity we came to a conclusion that the source region absorbs electromagnetic radiations during these periods of time. The comparison of daily changes of microseismic fields and electromagnetic radiations for several months pointed also to opposite signs of variations. Insignificant in level increases of the earth's surface tremors lead to significant decrease of electromagnetic radiations levels.

Further, the comparison of seismic noise levels for 8 focal regions and 12 non-seismic regions has shown that seismic noise in quiet regions is rather higher than in focal zones in 4-12 times. In focal regions great increase of seismic noise level has been observed after the earthquake in some period of time.

From this point of view the seismic gap physics before the earthquake becomes clear. That is: as our observations have shown in the focal region during the earthquake preparation the level of microseisms proper increases and absorbs seismic radiation coming from outside the zone. Taking into consideration the shown relation in the levels this effect is considered the seismic gap before the earthquake.

A number of experimentally observed effects can be explained by above-mentioned effect. For example, the investigations have shown, that in the focal zone the level of registering vibrosignals coming from the same source decreases constantly as the moment of the earthquake approaches.

Thus, the medium which experiences microseisms, absorbs coming from outside wave radiation in a wide range of frequency and amplitude.