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International Association of Seismology and Physics of the Earth's Interior, IASPEI, (Symposia: Strong Ground Motions; their source, path, and site effects)

Site Effects: Selection of the Seismic Observation System, Depending on the Requirements for the Intensity of the Detected Signals.

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The problems of site effects have principal sides which did not analyzed yet and still stay in the background. Firstly it concern the requirements for registration systems as we found out that for strong (earthquakes and explosions) and weak (microseisms) signals they are fundamentally different that conditioned by different medium reactions to those waves.

Having revealed the real nature of seismic gap effect, we showed that distribution of microseism intensity on the Earth's surface is such that the most intensive seismic noises are registered not in seismic areas but in aseismic, quiet zones.

Quite opposite scene revealed for strong signals.

The physics of these effects is connected with the fact that a stressed zone screens weak waves coming from without. For example, in the earthquake preparation period the level of source microvibrations increase, which absorbs outside seismic radiation and, this is observed as a seismic gap before event.

Analysis of the strong and weak signals intensity distribution dependence on sedimentary layer thickness has shown that two parameters have quite opposite impacts to them. If sedimentary layer thickness increases then intensity of microseisms rise. But for strong signals the picture is different: increasing of sedimentary layer thickness led to decreasing of quantity of registered events, - in seismic zone their quantity is much higher.

Conclusion: strong and weak signals cause different site effects, and levels of each of them may vary tens and hundreds times, depending of sedimentary layer thickness and seismicity that define requirements to registration equipment.