



Preseismic ULF magnetic field depression. New results

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Recently (Molchanov et al, 2003) we have reported about effect of ULF magnetic field depression several days before large earthquakes (maximum at minus 4 days) using 16-months regular observation at our station Karimshino (Kamchatka). At present we analyze results of 4-years observation in Karimshino and 2-years observation in Matsukawa station and conclude the following: a) The effect is found in Karimshino using both correlation function and method of epoch superimposition, but in this statistics the depression maximum is near minus 3 days; b) The same effect is found for Matsukawa data and nearby earthquakes in Japan. There is no correlation between ULF depression in Karimshino and earthquakes in Japan and vice versa; c) Optimal frequency range for the effect finding is 0.02-0.05 Hz in Karimshino 0.0025-0.01 Hz in Matsukawa and optimal period of recording is night-time; d) Value of depression is proportional to index of seismic activity for magnitude $M > 5.5$ and depths < 100 km; Such a proportionality for magnitudes $4 < M < 5$ is not clear. In explanation we assume an increase of atmosphere and ionosphere turbulence induced by fluid release at the ground surface. Our computations show that regular ULF electromagnetic radiation from ionosphere and magnetosphere can be essentially depressed due to this turbulence.