



The effects of synchronism of the seismic and electromagnetic phenomena in the dynamical system Lithosphere-Technosphere-Magnetosphere

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This report deals with the problem of human impact on the lithosphere and magnetosphere. We focus our attention on the statistical analysis of the long-term observations to study the so-called weekend and Big Ben effects, which are the septan and 15-minutes modulation of the seismic and electromagnetic wave activity. It is supposed that such effects are evidently of the human origin. The ample data on the earthquakes and the magnetospheric Pc1 waves accumulated in the catalogs are examined. The synchronous detection method in the form of the superposition epoch analysis has been used. The main conclusion is that the weekend and Big Ben effects are the real geophysical phenomena, and both are evidently human in origin. The statistical reliability of our results is very high. Both effects indicate ex facto that there is some nontrivial impact caused by industrial activity on the natural wave processes in the lithosphere and magnetosphere. We have analyzed also the multistep influence the earthquakes on the propagation of the magnetospheric Pc1 waves. The possible mechanisms of the interrelations between the lithosphere, technosphere and magnetosphere are discussed. The work was partly supported by the grants RFBR (09-05-00048) and Presidium of the Russian Academy of Sciences (Program 16).