



VLF signal and ELF noise spectrum changes related to magnetic storms and seismicity

Rozhnoi A.(1), M. Solovieva(1), O. Molchanov(1), O. Akentieva(2), M. Parrot(3),
P-F. Biagi(4) M. Hayakawa(5) and V. Gladyshev(1)

(1) Institute of the Earth Physics, RAS, Moscow, Russia, (2) Space Research Institute, RAS,
Moscow, Russia, (3) LPCE/CNRS, Orleans, France, (4) University of Bari, Bari, Italy, (5)
University of Electro-Communications, Chofu, Tokyo, Japan

Recently we published evidence of some correlation of the ELF ionospheric turbulence and seismicity. The main goal of this research is the demonstration of VLF signal - ELF noise spectrum changes near time of the strong magnetic storms and large earthquakes. We use DEMETER data obtained in period from November 2004 to January 2007. We show several clear examples of VLF signal modulation by IC (ion-cyclotron) waves. In result of our statistical analysis we have found the intensification of VLF signal broadening in the zones of increased ELF turbulence and some correlation in the two types of spectrum broadening. We discuss also the theoretical model of the nonlinear VLF signal-ELF noise interaction. The work was supported by ISTC under Grant 2990