Geophysical Research Abstracts
Vol. 12, EGU2010-6435, 2010
EGU General Assembly 2010

A statistical analysis on the correlation between LF signal disturbances and strong earthquakes

Alexander Rozhnoi (1), Maria Solovieva (1), Oleg Molchanov (1), Masashi Hayakawa (2), Pier Francesco Biagi (3), and Konrad Schwingenschuh (4)

(1) Institute of the Earth Physics, RAS, Moscow, Russian Federation (rozhnoi@ifz.ru), (2) University of Electro-Communications, Chofu, Tokyo, Japan, (3) University of Bari, Bari, Italy , (4) Space Research Institute, AAS, Graz, Austria

Data of seven years observations in Petropavlovsk-Kamchatsky are used for further statistical study on the correlation between disturbances in subionospheric LF signal and strong earthquakes. Nighttime difference amplitude and phase of the signal 40 kHz from JJY transmitter in Japan are analysed. It is found that anomalies of LF signal are observed in 15-20 % cases for earthquakes with =5.5-6.5. The signal behavior about the date of nine the strongest earthquakes with $\geq$7, which occurred in the wave path sensitivity zone during 2000-2008, is analysed in detail. Clear anomalies in amplitude and phase of the signal are observed in five cases for quiet geomagnetic conditions. In two cases earthquakes were preceded by strong geomagnetic activity which could obscure effect from earthquakes. These results confirm our previous statistical works and testify the efficiency of VLF/LF radio signal method for strong earthquakes forecast.