



A statistical study on the correlation between the ionospheric perturbations as detected by subionospheric VLF/LF propagation anomalies and earthquakes.

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We have published two papers on the statistical correlation between the ionospheric perturbations (as detected by subionospheric VLF/LF propagation anomaly) and earthquakes (Rozhnoi et al., 2004; Maekawa et al., 2006). Those two papers have concluded a statistically significant correlation of ionospheric perturbations with earthquakes with magnitude greater than 6. However, the number of events used for the superimposed epoch analyses in those papers is still not sufficient. So, the purpose of this paper is to perform a further statistical analysis on the basis of much larger data basis by making full use of our Japanese VLF/LF network. We have used the following propagation paths; JJY (Fukushima, 40 kHz)-Kochi, JJY-Moshiri, JJY-Kamchatka, JJI (Ebino, Kyushu, 22.2 kHz)-Moshiri, JJI-Kamchatka, and JJI-Chiba. We select the earthquakes with magnitude greater than 6.0, taking place within the 5th Fresnel zone of each propagation path, and we present the statistical result on the correlation between the VLF/LF anomaly (nighttime average amplitude and nighttime fluctuation) and earthquakes by means of the superimposed epoch analysis