



## **ELF ionospheric plasma turbulence registered by DEMETER satellite over epicenters of the strong earthquakes**

Jan Błęcki (1,3), Michel Parrot (2), Roman Wronowski (1), and Małgorzata Kościesza (1)

(1) Space Research Centre PAS, Warsaw, Poland (jblecki@cbk.waw.pl), (2) LPC2E, CNRS, Orleans, France, (3) Collegium Varsoviense, Warsaw, Poland

During 5 years of operation DEMETER French microsatellite registered clear disturbances of the electromagnetic field and plasma parameters in the time of the many crossings of the area over epicenters of the strong ( $M > 6.5$ ) earthquakes. The payload of DEMETER allows to study the waves and also some important plasma parameters (ion composition, electron density and temperature, energetic particles) with high temporal resolution. In the present work analysis of the low frequency fluctuations of the magnetic and electric fields for the selected strong earthquakes (Sichuan, Aquilla, Haiti and others) will be given. Special attention will be given to study of the characteristics of the spectra of these variations and search of the nonlinear effects. This analysis is possible in the time interval when the waveform has been transmitted. The mechanism of the energy transmission from the earthquake to the ionosphere is not clear, but we can discuss the behavior of the ionospheric plasma and search of the instabilities which could be a source of the electromagnetic field variations. Some attempt of this discussion will be given in the presentation. The search of the characteristics of the spectra and multispectra will be given in this presentation.