



Seismo-magnetic observations aboard the upcoming Chinese CSES satellite

Konrad Schwingenschuh (1), Werner Magnes (1), Shen Xuhui (2), Jindong Wang (3), Andreas Pollinger (1), Christian Hagen (1), Roland Lammegger (5), Michaela Ellmeier (5), Gustav Prattes (1), Hans U. Eichelberger (1), Daniel Wolbang (1), Mohammed Y. Boudjada (1), Bruno P. Besser (1), Alexander A. Rozhnoi (4), Tielong Zhang (1), Magda Delva (1), Irmgard Jernej (1), and Özer Aydogar (1)

(1) Space Research Institute, Graz, Austria (konrad.schwingenschuh@oeaw.ac.at), (2) Institute of Earthquake Administration, Beijing, China, (3) Center for Space Science and Applied Research, Chinese Academy of Sciences, Beijing, China, (4) Institute of the Earth Physics, Russian Academy of Sciences, Moscow, Russia, (5) Institute of Experimental Physics, Graz University of Technology, Graz, Austria

One objective of the upcoming Chinese Seismo-Electromagnetic Satellite (CSES) mission is the observation of seismo-magnetic phenomena aboard CSES.

Several hypothesis exist in order to explain the influence of seismic phenomena on magnetic field variations in the atmosphere and in the ionosphere. The so called microfracture electrification (Molchanov and Hayakawa, 1998) proposes the generation of a broad band electric-magnetic signal which is low-pass filtered by the crustal and atmospheric/ionospheric conductivity. Depending on the environmental conductivity σ and on the permeability μ (Prattes et al., 2008) the electromagnetic field fluctuations with the frequency ω can propagate approximately d_{skin} . ($d_{\text{skin}} = \sqrt{2/(\mu \cdot \sigma \cdot \omega)}$)

We present the sensitivity of the CSES scalar dark state magnetometer (Schwingenschuh et al., 2016) after the final tests and compare it with seismo-magnetic ULF model results using various earthquake parameters.

References:

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