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Event comparison between ground based VLF/LF observations and satellite magnetic measurements from CDSM aboard CSES

Hans Eichelberger (1), Konrad Schwingenschuh (1), Mohammed Y. Boudjada (1), Bruno P. Besser (1), Daniel Wolbang (3), Alexander Rozhnoi (2), Maria Solovieva (2), Pier Francesco Biagi (4), Manfred Stachel (1), Gustav Prattes (1), Özer Aydogar (1), Cosima Muck (1), Claudia Grill (1), and Irmgard Jernej (1)

(1) Space Research Institute, Austrian Academy of Sciences, Graz, Austria, (2) Schmidt Institute of Physics of the Earth, RAS, Moscow, Russia, (3) University of Graz, Institute of Physics, IGAM, Graz, Austria, (4) Department of Physics, University of Bari, Bari, Italy

In this study we compare events from sub-ionospheric VLF/LF measurements with scalar magnetic field data from the Coupled Dark State Magnetometer (CDSM) aboard the China Seismo-Electromagnetic Satellite (CSES), launched February 2nd, 2018.
The initial goal is to establish a link between this two-parametric observations in general, in a second objective the measurements could improve the reliability of existing methods in seismic hazard studies (Ouzounov et al, 2018).
The focus is on the VLF/LF receiver system, a mid-latitude station in Graz, Austria. The continuous amplitude and phase measurements from sub-ionospheric paths show variations related to seismic and nonseismic activity. We investigate events with European VLF/LF paths in the time span July 2018 to November 2018, i.e. spatial and temporal overlap with CDSM measurements.
In our findings there is evidence that nonseismic modifications could be characterised with both methods. The complementary ground- and space-based investigations shall be continued to get more events and a robust statistics.

Ref:
Ouzounov, D., Pulinets, S., Hattori, K. and Taylor P., “Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies”, 384 p., Geophysical Monograph Series, 2018. ISBN: 978-1-119-15693-2