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# Study of earthquakes and related phenomena using a satellite scalar magnetometer

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A new type of scalar magnetometer for space applications has been developed (see Lammegger 2008). A first instrument of this type will be flown aboard the upcoming Chinese Seismo-Electromagnetic Satellite (CSES).
The scalar magnetometer can measure the total magnetic field with an accuracy of about 50 pT/sqrt(Hz) in the frequency range between 0 and 30 Hz.
In order to minimize the stray field of the satellite, the sensor of the scalar magnetometer is mounted at the tip of a five meter boom.
The main scientific objective of the scalar magnetometer aboard the Chinese satellite is the investigation of seismic phenomena before, during and after earthquakes or volcanic activity.
The expected variations of the total magnetic field above seismic active regions, are presented, using a model based on the groundbased tectonomagnetic measurements and are simplified lithospheric-ionospheric coupling coefficient.

Patent:
Lammegger, R., WO 2008/151344 A3, Method and Device for Measuring Magnetic Fields