

## **An update on the cosmo-seismic correlations: an interplay of the geomagnetic field and the solar wind or an exotic "third factor"?**

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I'll report on the progress with understanding the physics of the cosmo-seismic correlations. The main observations associated with the effect point to the role of both solar magnetism and lunar gravitational forces, although the latter does not appear to have a tidal character. In addition we observe a clear appearance of the sidereal day periodicity in both cosmic ray and earthquake data. The observed peculiar characteristics of the phenomenon might be at least partly consistent with the impact of magnetic forces released while the geomagnetic field encounters different sectors of the geomagnetosphere with very specific, near-24h regularities observed also in both the cosmic ray and earthquake data. However, the whole range of properties of the cosmo-seismic effect, and in particular an impact of the Moon and the sidereal day frequencies present in both cosmic and seismic data, seem to require some additional explanation, possibly including some "third factor" capable of affecting both cosmic ray detection frequencies and of inducing earthquakes, such as a dark matter stream. If any of these scenarios is confirmed the scientific consequences will be immense. For instance, we should be able to predict some earthquakes by monitoring spaceweather and the cosmic radiation, and we would have to revisit all the climate change models by considering the newly discovered external factor. A large scale impact of spaceweather conditions or of a nearby dark matter stream could possibly be hardly noticed by individual, narrowly-focused observatories, but the observational chances should grow with adopting an unbiased, interdisciplinary approach where a combination of weak indications from distinct research areas could give a strong, unquestionable signature. We attempt to implement such an approach in CREDO, and everybody is invited to be a part of this quest.

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