

To Reviewer #1:

Thank you once again for your valuable suggestions on how to improve this study. The revisions are as follows:

Comment 1: If the authors wish, they could supplement the manuscript with: Madoi Earthquake data (date, magnitude, coordinates, etc.). An index map to more easily frame the studied area and enhance Figure 1.

Response 1: The Madoi earthquake data (including date, magnitude, coordinates, etc.) have been added to Figure 1.

Comment 2: Mention other studies based on geomagnetic anomalies regarding time windows between the anomaly and the earthquake of 90, 60, 30 days, and even a few hours before the main shock. Similarly, there are also publications that address the search for candidate seismic precursors in frequencies below 1 Hz.

Response 2: Regarding the temporal scale, the 90-day observation window selected for this study accounts for long-term background evolution and aligns with the pre-seismic anomaly accumulation phenomenon—occurring approximately 100 days prior to an event—as identified by De Santis et al. (2019). Simultaneously, the proposed methodology maintains the sensitivity required to capture abrupt anomalies within 30 days of the earthquake and during the immediate short-term stage (as detailed in lines 212–219). In terms of frequency characteristics, this study utilizes high-frequency sampling data at 1 Hz, which, compared to traditional minute-resolution data, allows for a more refined characterization of the dynamics within the Ultra-Low Frequency ULF (0.001–0.5 Hz) band.

References:

De Santis, A., Marchetti, D., Pavón-Carrasco, F. J., Cianchini, G., Perrone, L., Abbattista, C., Alfonsi, L., Amoroso, L., Campuzano, S. A., Carbone, M., Cesaroni, C., De Franceschi, G., De Santis, A., Di Giovambattista, R., Ippolito, A., Piscini, A., Sabbagh, D., Soldani, M., Santoro, F., Spogli, L., and Haegmans, R.: Precursory worldwide signatures of earthquake occurrences on Swarm satellite data, Scientific Reports, 9, 20287, 10.1038/s41598-019-56599-1, 2019

Comment 3: Specifying that the anomalies are geomagnetic and not solar in nature is important because numerous studies, including those available online, link solar activity to the triggering of major geophysical events.

Response 3: In Section 5.1 (Line 282-294), an analysis of the impact of space weather activity on geomagnetic anomalies has been included. Based on an investigation of parameters such as *Dst* and *Kp* during the periods when anomalies occurred, we conclude that the appearance of these anomalies is unrelated to space weather activity.

Comment 4: Among the references the authors could add are those regarding studies that have linked the frequency of pre-seismic signals to the hypocenter.

Response 4: In Section 5.2 (Line 295-309), we have supplemented the study by linking the frequency of pre-earthquake signals to the seismic source. The skin depth of the dominant frequency of the anomalies was calculated and found that it closely matches the focal depth of the Madoi earthquake.

Comment 5: There are spacing errors on page 7, while in the references, is the capitalization of the first citation correct?

Response 5: Several formatting errors in the manuscript have also been corrected.

If any further issues remain, we would greatly appreciate your continued guidance and will promptly address them accordingly.

To Reviewer #2:

We greatly appreciate your detailed and professional comments on the manuscript. The specific revisions are as follows:

Comment 1: Furthermore, the authors could include some limitations of the present work in the conclusions, such as the lack of stations closer than 100 km to the epicentre and the angular gap of distributions of the available stations, mainly on the northern side of the epicentre. Future studies can also investigate longer time periods.

Response 1: In the conclusion (Line 447-452), we have summarized the limitations of this study and outlined directions for future research.

Comment 2: Minor points and specific comments:

Response 2: Regarding the specific revisions to the manuscript, we have made the modifications in accordance with your comments.

If any further issues remain, we would greatly appreciate your continued guidance and will promptly address them accordingly.