

This paper represents a novelty in the earthquake precursor literature: it intends to scrutinize the series of anomalies preceding the 2015 Nepal earthquake sequence in order to establish the correct chain of processes of the Lithosphere-Coversphere-Atmosphere-Ionosphere coupling (LCAI-coupling) physics. The chosen case study is interesting because it is one the most recent studied earthquakes, so it represents a good example to apply the approach these authors propose. The paper can be published after some minor revision is undertaken, following the suggestions below, that are indicated in the order they appear in the text.

The title: I would avoid acronyms in the title. In addition, perhaps “Scrutinizing” could replace “Screening and rooting”. So better: “Scrutinizing the multiple anomalies of Nepal earthquake sequence in 2015 with Deviation-Time-Space criterion and homologous Lithosphere-Coversphere-Atmosphere-Ionosphere coupling physics”

Line 14. Please replace “alternation” with “alteration” (as correctly CSFA defined after in the main text)

Line 78. I would insert “(Nepal)” after “Gorkha”, in order to be clear that you are speaking about the same Nepal earthquake, i.e. the mainshock that will be dealt with this paper.

Line 85. I would insert “with a” after “behaved”.

Figure 1. It is not clear from which catalogue the earthquake data depicted in the figure have been downloaded. USGS (as indicated in Figure 6; but see also my associated question to that figure)?

Figure 3. A referring table with each abbreviation together with its corresponding literature would be welcome. By the way, the abbreviation “Santis 2017” should be replaced by the complete surname of the first author, i.e. “De Santis 2017”. (see also Figure 7 and Line 741)

Line 250. Please replace “LACI” with “LCAI”

Figure 6. In the caption you mention that the seismic activities is taken from USGS with earthquakes Mw equal to or larger than 2.5. The latter fact is dubious since USGS has, outside USA, a typical magnitude of completeness of 4-4.5. Could you please check is it is true that there are earthquakes with magnitude from 2.5 to 4?

Line 386. Please replace “attribute” with “attributed”.

Figure 7. Please replace “Santis 2017” with “De Santis 2017”.

Line 404. “eruption”? Probably you meant “rupture”.

Line 467. Please replace “LACI” with “LCAI”

Line 529. In the list of references, there are two citations with the journal “Techno” that I think are actually “Tectonophysics”. (see also in Line 630)

Line 611. Please write correctly “Lavé”.

Line 619. Please replace “teh ionosphere” with “the ionosphere”.

Line 707. Please replace “Modication” with “Modification”.

Line 741. Please replace “Santis, and A.D.” with “De Santis A.”

Line 745. Please replace “2009Mw 7.3” with “2009 Mw 7.3”

Lines 746-757. Please remove the “ before and after the title of the paper.

Response to RC1: 'Comment on egusphere-2022-926', Angelo De Santis

Dear Prof. Angelo De Santis,

Thank you very much for your cognitive review of this manuscript and your insightful comments. We are very grateful for your recognition of our manuscript, and we are also willing to accept your suggestions and further improve the manuscript.

The title: I would avoid acronyms in the title. In addition, perhaps “Scrutinizing” could replace “Screening and rooting”. So better: “Scrutinizing the multiple anomalies of Nepal earthquake sequence in 2015 with Deviation-Time-Space criterion and homologous Lithosphere-Coversphere-Atmosphere-Ionosphere coupling physics”

Response: We agree with you that the full names of key terms should be written in the title. About the gerund at the beginning of the title, we have some special considerations we can discuss with you.

“Scrutinizing” is also a professional word, which embodies a scientific attitude towards things and contains the meaning of scrutiny. In the study of seismic multi-parameter anomalies, we really need a scientific attitude to examine these results in the face of complex information, and then judge their authenticity and reliability. However, in this manuscript, in addition to the sorting out and preliminary judgment of the existing research results, it is more important that we establish the relationship between the multi-parameter anomalies in Nepal from the mechanism, so that a variety of anomalies have roots instead of just existing in one appearance. Moreover, it is more important that after obtaining the multi-geosphere and multi-parameter anomalies, we also use the DTS criterion and homologous physics to carry out further rigorous screening. This process is top-down, which is different from the previous LCAI coupling sequence. In this way, the abnormal parameters of the geospheres far from the hypocenter can be traced step by step to the potential seismogenic area or the crust stress lock-in area through the verification of the abnormal parameters of the geospheres at a lower height. This logical analysis is the biggest innovation of this manuscript, which is expected to serve for earthquake

prediction in the near future.

It is clear that this manuscript contains two parts, which are the preliminary screening and judgment of the existing multi-parameter results, and the analysis and verification of the sources of these anomalies based on the screened results, that is, to find their roots. Therefore, we believe that 'Screening and rooting' can better reflect the content and innovation of this manuscript. The title can be changed as follows: *Screening and rooting the multiple anomalies of Nepal earthquake sequence in 2015 with Deviation-Time-Space criterion and homologous Lithosphere-Coversphere-Atmosphere-Ionosphere coupling physics.*

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Response: Thanks for your careful work. We have checked the earthquake catalog used, which were downloaded from the USGS website (<https://earthquake.usgs.gov/earthquakes/search/>). The website is supposed to search and download data for earthquakes with magnitude-2.5 or greater, but the smallest magnitude retrieved was 3.0. So, we have indicated in the article that the minimum magnitude of earthquakes taken from USGS is 3.0.

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Response: We are very grateful for your careful review of our manuscript, and we are very sorry for our negligence and typographical errors. We have corrected all these errors and checked the whole text carefully to avoid any omissions. Your comments make this draft more rigorous. Thank you very much.