

Interactive comment on “Quasi-synchronous ionospheric and surface latent heat flux anomalies before the 2007 Pu’er earthquake in China” by K. Qin et al.

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This article is interesting, especially because it moves a (little but important) step forward from the typical work of searching just a type of anomaly before some large earthquake to searching couples of anomalies due to a unique integrated process related to the earthquake preparation. In particular the paper finds quasi-synchronous ionospheric and SLHF anomalies and describes two possible not exclusive processes for their almost simultaneous appearance: as one can understand this quasi-synchronicity would improve any scheme of earthquake forecasting (as it is said in the conclusive sentence of the paper). Before to pass below to some marginal points, I would arise a

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question: the robustness of the SHLF anomaly is quite clear (coming from a 34 year statistics of the same day), what could be put in doubt is related to the mentioned ionospheric anomalies, claimed to be earthquake related. To avoid any suspect, please add some figures or tables (that now are missing) where you show that some magnetic index (e.g. K index) is rather low in the period of the corresponding anomaly. This would exclude that the ionospheric anomaly has some external origin. (I know that you mention that Shen’s group did something similar – lines 10-11 of pag. 2442-, but it would be better to show something also here). I also admit that present English must be improved and a few minor mistakes removed, however the paper already looks almost clear everywhere. Regarding to this (but not only), I have some other suggestions to be taken into account by the authors in order to improve readability and clarity.

Abstract (pag. 2440).

- I would insert in line 5 “(China)” just after “Pu’er earthquake” in order to clarify the location (although it is said in the title, it is not bad to repeat just once also in the abstract).

- In line 12, I would change “possible” to “possibly”.

Section 1 (Introduction)

- Pag. 2440, line 20, I would insert “the” before “Earth Observation”.

- Pag. 2440, lines 22-23 you mention here DEMETER, that will be again introduced later in pag.2440, lines 22-23. A suggestion is to remove here the specific indications to “GPS” and “DEMETER” but just saying “have been observed by satellites”, leaving the citations after.

- Pag. 2440, line 24, I would change “;” to “.” just after the series of citations.

- Pag. 2441, line 17, I would change “strike” to “struck” to maintain the same verb tense in the past.

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Section 2 (Ionospheric electron density anomaly)

-Pag.2442, line 26. I do not understand the term “obviously” in this contest: do you mean “significantly”?

Section 3 (Surface latent heat flux anomaly)

- Pag. 2444, equation (1): Please define “n” (should it be the number of years of analyses, i.e. 34?)

- Pag.2444, line 26: please change “thrid” with “third”

- Pag.2445, line 1: I would remove “ones” after “three”.

Section 4 (Discussion and Conclusion)

- Pag. 2445, line 9: I would change “Some ones” with “Some researchers”

- Pag. 2445, line 22: please write separately “several possible”

- Pag. 2445, line 7: please change “pre-exist” with “pre-existing”

- Pag.2446, line 14: I suggest to write a more firm sentence, such as “we examined the possible . . .”

- Pag. 2446, line 29/Pag. 2447, lines 1-2: please write “. . . we suggest that the combined investigation of the spatio-temporal features of the ionospheric Ne and thermal SLHF anomalies and their relations is of great importance . . .”

- Pag. 2447, line 3: please change “providing an” with “providing a”.

References

- Pag. 2448, line 24. Please write separately “anomaly precursor”

- Pag. 2449, line 7: please change “Piertraposa” with “Pietrapertosa”

- Pag. 2449, line 8: please write separately “for monitoring”

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Figure captions

Pag. 2451, last line: please remove one of the two “the”.

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