

Interactive comment on “Brief Communication: An exclusive example of surface latent heat flux variation before Russia M6.1 earthquake” by Y. Jie and G. Guangmeng

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This article summarises the finding that surface latent heat flux (SLHF) anomalies claimed prior to earthquakes might not, actually, be attributable to seismic processes but actually to factors relating to: 1. how the data are analysed and allied with this, 2. the presence of cloud. The overall suggestion is that previous claims of SLHF anomalies prior to earthquakes should be re-examined on this basis and that no matter how complex the analytical methods applied to a dataset are, if the underlying assumptions are potentially inaccurate (i.e. SLHF is categorically related to seismic activity), then the findings might be too.

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Convincing evidence of a potential SLHF precursor is shown. It is then revealed that this is potentially due to latent heat energy release from the condensation of water vapour to the dense clouds of the region and that such possibilities have largely been disregarded in previous studies. The fact that such clouds could, potentially, be related to earthquake activity (although this is unproven) is acknowledged briefly.

I think a key statement (that I have also made before) is that meteorologists should really be involved in such work as they may understand the atmospheric parameters more comprehensively than a geologist.

Overall, the paper raises issues which must be considered by scientists in the working in the field. If anything, it reiterates (like Blackett et al. 2011) that we cannot always take apparent anomalies on face value.

Some things that perhaps should/could be addressed/acknowledged are:

1. It is possible that the presence of cloud, and a SLHF anomaly ACTUALLY RELATED TO THE EARTHQUAKE, simply coincided by chance i.e. both occurred at the same time here. I don't know of any way you could separate these from each other but some discussion of this is missing.

2. The point about the possibility of the clouds being directly related to the earthquake is brushed over. I am reserved in my opinion on earthquake clouds but I think a little more discussion of this potential would be useful.

A number of still controversial statements are made (e.g. that stress accumulation prior to an earthquake will result in thermal emissions). The controversy surrounding such claims should probably, at least, be acknowledged (e.g. pg. 2, line 17)

Other points: -I'm not sure the title actually relates to the content - consider amending it.

-The paper would benefit from typos and small grammatical issues being ironed out with English proof-reading. There are too many small errors to point out: they don't

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stop understanding but are grammatically incorrect.

-Pg. 3 line 17 – add 'respectively' -Pg 4 line 6 – can you be more precise than 'cold and wet' – how cold, how wet? -Pg 5 line 15 – solidification is not the word. Do you mean condensation? -At all times figures should be referred to by their number

All figures need to be improved: add axis titles, improve appearance (standardise them). Improve annotations in some cases (e.g. Fig 2: be more specific than 'SLHF change').

Fig. 4 annotation: spelling of 'epicentral'. Could we also: - add some place names (it's hard to determine where this location is) – perhaps a wider scale map as an insert to show the precise geographical location - overlay the locations of the clouds?

Fig 5. This figure is quite unclear. Can it be clarified. Also: add some place names (it's hard to determine where this location is) – perhaps a wider scale map as an insert to show the precise geographical location.

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