

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.

Anonymous Referee #1

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General Review

The manuscript presents observations of possible ionospheric (Ne) and thermal anomalies (SLHF) that occurred prior to the 2007 $M_s = 6.4$ Pu’er earthquake. I cannot recommend this manuscript for publication in NHESS at this time because, in my opinion, the observations of Ne and SLHF prior the earthquake were not particularly anomalous. Moreover, if the authors want to test the radon/air-ionization hypothesis, they need to present radon observations from the earthquake region.

Specific Scientific and Technical Comments

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Fatal Flaw: Observations of Ne and SLHF prior the earthquake did not seem to be particular anomalous.

1. In Figure 1, the Ne observations from 2007-05-24 (the red curve) do not look anomalous compared with the other observations presented. For instance, the observations from 2007-06-09 (green curve) show similar enhancements in the latitude region of the earthquake. And the 2007-04-06 (orange curve) observations show an even greater enhancement for lower latitudes where presumably no earthquakes occurred.
2. In Figure 2, the Ne maximum on May 24, 2007 does not look particularly unique within the 1-year time series shown. There are two similar maxima that presumably did not precede earthquakes.
3. In Figure 3, the peak in SLHF observations on May 23, 2007 are just barely above the 2-sigma level. Typically, a statistically significant anomalous signal would be above the 3- or 4-sigma level. In my examination of Figure 3, the only seemingly anomalous signal is the maximum in the green curve on about May 20 from a year other than 2007 when presumably no earthquake occurred.
4. In Figure 4, increases in delta SLHF are seen outside the white box in the top left and top right panels of the figure. Are these increases related to the earthquake somehow as well?
5. Radon observations from the earthquake region are needed to properly test the radon, air ionization, Ne, SLHF mechanism that the authors propose. I strongly recommend that the authors include radon observations in their future manuscripts on this topic.

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