**Hydrology and
Earth System
Sciences
Discussions**

Interactive comment on "Recent advances in land surface climate observations on the Tibetan Plateau" *by* Y. Ma et al.

Anonymous Referee #4

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Review of HESSD-6-943-2009

General:

1. The manuscript is an overview of relevant observations and preliminary observational results over the Tibetan Plateau, which are of major interest. 2. No new ideas are presented, merely a summary of preceding work/research is provided and a description of the observations, which provides the international community with a potentially helpful overview. 3. However, results are given without proper reference to the work from which they were distilled and statements are made without actual proper foundations. 4. In addition, more than half of the references provided (which are quite a large number) are in the Chinese language or in Chinese/Japanese journals, making them rather in-accessible to the international scientific community. 5. The manuscript

lacks proper illustrations; descriptions of (temporal) behavior of several parameters are provided but they are not properly founded (or referenced), nor illustrations are provided showing that behavior. 6. The contribution needs improvement of the English (construction of sentences, and also tenses, past, present, are not consistent). 7. In general the figures are not very clear and messy; they should be made more uniform.

Summarizing I recommend major revision and re-submission. The above comments are detailed below:

Section 1. "Introduction".

Page 945, lines 1-2 and 9-10: Are all 8 references relevant?

Section 2. "Tibetan Observation and Research Platform (TORP)".

Page 946, lines 1-13: Could be shortened drastically, by referring to table 1.

Page 947, line 6: "best data set"; what defines "best"?

Section 3. "In-situ data analysis and results over the Tibetan Plateau area".

Page 947, line 21: Use a tab/indent to provide a better layout when summing the different (numbered) results.

Page 948, line 2: what is meant with "variation" here?

Page 948, lines 4-6: In the dry period H is larger then LE and during the wet season LE is larger than H; this is not typical only for Tibetan Plateau I guess...

Page 948, line 10; Reference is made to fig 3, but it is not clear where this is observed. Is it an observation at one point typical for the entire plateau, is it an average?

Page 948, line 11 and line 21; "flat prairie area" and "alpine meadow surface"; maybe a landuse, or landcover map would help, or otherwise an indication of where these areas occur?

Page 948, lines 22/23: Beijing Standard Time; at other places in the paper other time

references are used. These should be consistent. Probably using utc for the entire area would be better, or use the local time, but in any case there should be consistency throughout the paper.

Page 947 and 948; section 3.1 seems to be a summary of observations/conclusions drawn from previous work; it would be nice to: (1) have the references of these papers, (2) show these described phenomena in several figures that illustrate typical (average) behavior for typical areas.

Page 949, line 1; are all references mentioned here relevant? There are quite a number of references in the paper, possibly they could be reduced?

Page 949, line 2: Use a tab/indent to provide a better layout when summing the different (numbered) results.

Page 949, line 3; Reference is made to fig 4, but it is not clear where this is observed. Is it an observation at one point typical for the entire plateau, is it an average?

Page 949, lines 4 – 9: Values for Zom, Zoh and kB-1 are mentioned but nowhere is provided how they were determined (references, methods?)

Page 949, line 10: "numerical simulation"; which numerical simulation?

Page 949, line 11: "parameterization"; which parameterization?

Page 949, line 28: Use a tab/indent to provide a better layout when summing the different (numbered) results.

Page 949, line 28: it says ABL height of almost 3 km, whereas Fig 5 shows a height of 2 km?

Page 950, lines 18 – 22; it is not clear what is meant with this sentence (basically point (4).

Page 950, line 23; Reference is made to fig 5, but it is not clear where this is observed.

Is it an observation at one point typical for the entire plateau, is it an average?

Page 950, line 24: "Beijing Time"; see remark made above on time references.

Page 951, line 5: Use a tab/indent to provide a better layout when summing the different (numbered) results (also for sub-sections a, b, c).

Page 951, line 7: "normal"; what is a normal site?

Page 951, line 8: "covariance of the vertical wind"; with what?

Page 951, line 9 and 10: "normalized": how are they normalized?

Page 951, line 10 and 11: "the power law of 1/3" and "...of -1/3"; which laws? Provide references and/or equations?

Page 951, lines 14 – 17: it is not clear what is meant here. Not point a, nor point b or point c. This needs additional explanation. In fact, the entire section 3.4 needs additional explanation (especially when seen in the light of an overview paper), which might already be helped a lot by a number of proper illustrations.

Page 952, line 8: "normalized", how are they normalized?

Page 952, line 9: "literature", which literature?

Page 952, line 9: editorial issues; "neutra1" should be "neutral", space between "con-ditionrelations"

Page 952, line 10: "the 1/3 power law"; which? Provide reference and/or equation?

Page 952, line 10-11; "the coefficients are different"; no evidence is given for that, nor a proper reference.

Section "Concluding remarks".

Page 952, line 23: "the coming researches"; should be changed to "future research"?

Page 952, line 27; "All these researches will be done"; should be changed to "will have

to be done"?

Page 953, line 1: "coming days", should be changed to "days to come"?

References: See remarks made above.

Figures.

Figure 1: a. Scale bar and north arrow are missing.

Figure 2: a. Figure is too small in parts; not possible to read the text in the two boxes below. b. The sub sections of the figure are not aligned; gives jumpy idea. c. Legends are not clear, nor uniform d. Scales of the two boxes are not identical; should be the same

Figure 3: a. Uses LST, whereas figure 5 uses Beijing time; make them consistent. b. Also be more consistent in your layout for the several figures (also figs 4 and 5) c. It is not mentioned form where this data is taken.

Figure 4: a. layout fig 3, 4 and 5 should be the same (moreover, other parameters (using the same layout) should be displayed as well; see remark in the text above) b. Y-axis title is missing c. X-axis scales are missing

Figure 5. a. Layout should be the same for figs 3, 4, 5; Examples: axis sub-lines are inside figure in fig 3 and 4 partly outside the figure in fig 5; black dots in fig 5, open dots in fig 4, 4 axes in fig 3, 2 axes in fig 4 and 5, sometimes lines are bold, sometimes not. . . .

Table 1: Should be re-arranged; different columns showing Site, sensor, brand, observation height/depth, etc.

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