

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

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General comments:

Question(Q): This paper presented some new advances in the ground observation system of the Tibet Plateau, and some preliminary results of this system. This research is very useful for the researchers who would like to know what is new recently in the ground observation of the Tibet Plateau; it is also a great contribution to understand the impact of the Tibet Plateau to the environment and climate changes in China, Asia and even in the Northern Hemisphere. But a few of descriptions, usage of several terms are not well arranged. I suggest accept it for publishing in this journal after a minor revision. Answer (A): Thank you very much for your comments and suggestions.

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The specific comments:

Q: P1: Pay attention to the meaning and usage of “land surface climate”? A: Thank you for your comments. We already change the Title of the manuscript to “Recent advances on the study of atmosphere-land interaction observations on the Tibetan Plateau” according to your comments.

Q: P2L11: Is there vertical variation for land surface heat fluxes and CO2 flux partitioning? A: Yes, vertical variations for sensible and latent heat flux are shown from Line 10 to Line 14 in page 6. But it is still the diurnal variation at the different height, therefore “vertical variation” was deleted in the revised manuscript.

Q: P2L25: Change “The plateau absorbs a large amount of solar radiation” to “The plateau absorbs a large proportion of solar radiation” A: Thank you for your suggestion. I have changed it in the revised manuscript.

Q: P3L5-7: Pay attention to the meaning of number in the sentence “Therefore, it has increased the number of atmosphere-land interaction studies” A: Thank you for your suggestion. I have changed it in the revised manuscript.

Q: P3L7: How do the “observational parameters” limit “experiments? (“But experiments have been limited by observational parameters”) A: Thank you for your suggestion. I have revised this sentence in the revised manuscript.

Q:P3L15: Change “is now focusing” to “has been established and being focused” A: Thank you for your suggestion. I have changed it in the revised manuscript.

Q:P3L18-21: The content of these lines are same as the ones in P2L9-13. A: You are right, but the meaning of these lines is not same as the ones in P2L9-13. P3L18-21 is in the introduction section, we describe this part as “. . . will be shown”. P2L9-13 is in the abstract, describe this part “. . . has been shown”

Q:P3L24: Change “There are 21 comprehensive observation and research stations and 16 observational sites in the TORP” to “the MORP is consisted of : : :: : :.” A:

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Thank you for your suggestion. I have changed it in the revised manuscript.

Q: P3L27: Change “station will include” to “station include” A: Thank you for your suggestion. I have changed it in the revised manuscript.

Q:P5L6: What does “the best data set” means? A: Thank you for your comment. “the best data set” means that the observation terms , data quality and the observation period of the GAME/Tibet and the CAMP/Tibet data set is the best data set over the Tibetan Plateau till now.

Q: P5L12:Change “The data collected in the TORP” to “The data collected by the TORP” A: Thank you for your suggestion. I have changed it in the revised manuscript.

Q: P524:What does “obvious” mean? It should be obvious larger or higher or: : :: : :  
A: Thank you for your suggestion. I have changed it in the revised manuscript.

Q: P5L24-25:“net radiation fluxes are obvious larger than that in other areas”, this situation is not always true for the Tibet plateau compared to other region (Such as the case in the Oasis). A: Thank you for your comment. You are right, I have deleted “net radiation fluxes are obvious larger than that in other areas” in the revised manuscript.

Q: P6L2: Give the number of “imbalances” in the Tibet Plateau. A: Thank you for your suggestion. The number of “imbalances” in the Tibet Plateau has been given in the revised manuscript.

Q: P6L16: Change“(5) The land surface is very strong heating source in the day time” to “(5) the land surface is a very strong heating source in the day time” A: Thank you for your suggestion. I have changed it in the revised manuscript.

Q: P8L3: What does “the dominant energy” mean? A: It means that the sensible heat flux is the main role in the ABL growth.

Q: P8L19: Delete “(the representative of Himalaya)” A: Thank you for your suggestion. I have deleted it in the revised manuscript. Q: P9L7: What does “normal’ mean in

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“other normal sites”? A: Thank you for your comments. “other normal sites” means that the Tibetan Plateau is special site, the other sites in another area is the “normal”.

Q: P9L20: Delete “(the representative of Himalaya)” A: Thank you for your suggestion. I have deleted it in the revised manuscript.

Q: P10L12: The usage of “special terrains” ??? A: I think we can use the “special terrains” due to the very special topography over the Everest area.

Q: P10L16: Is there vertical variation for land surface heat fluxes and CO2 flux partitioning? A: Thank you for your comments. Yes, vertical variations for sensible and latent heat flux are shown from Line 10 to Line 14 in page 6. But it is still the diurnal variation at the different height, therefore “vertical variation” was deleted in the revised manuscript.

Q: P10L24: “All the results in this paper are gotten from high elevation area, the Tibetan Plateau”. The results are gotten from the datasets observed in the Tibetan Plateau, not from the Tibetan Plateau itself. A: Thank you for your comments. I have modified this part in the revised manuscript.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 943, 2009.

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