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**Review of "Evaluation of cloud effects on air temperature estimation using MODIS LST based on ground measurements over the Tibetan Plateau" by Zhang et al.**

In this paper, the authors evaluated the cloud effect on air temperature derived from MODIS land surface temperature based on ground measurements over the Tibetan Plateau. In summary, the authors revealed an interesting result. However, some questions and points need to be further addressed by some revisions before it can be published by ACP

The following is my comments:

- (1) Line 86: A reference was missed, such as (Yu et al?).
- (2) Line 144: Did you test the accuracy of LST derived from radiative transfer theory?
- (3) Please show that the scattered points in the Fig.2 are based on the observed downward long-wave radiation. In addition, it is necessary to the further indicate how did you derive the cloud index in the section 3.1.

A reference is needed in Line 185.

- (4) Section 3.2: My concern about the section is that subvisible cloud can affect the accuracies of MODIS LST, However, some aerosol layers also have a little bit effect, such as, at spring (Huang J., T. Wang, W. Wang, Z. Li, and H. Yan, 2014: Climate effects of dust aerosols over East Asian arid and semiarid regions. *Journal of Geophysical Research: Atmospheres*, 119, 11398–11416, doi:10.1002/2014JD021796.). How did you consider this issue?

- (5) Section3.3: In your method, only LST was used to estimate the air temperature. Did you do some comparison with other methods? My main concern is that larger uncertainty maybe also exists in your method, thus some error evaluations are needed.

- (6) In the section 3, a detailed flow chart is recommended, and can be make the paper

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more clear.