

We are thankful to the reviewers for their valuable comments on the paper. Below we provide the responses to the comments and questions raised by point to point. Modifications and improvements are incorporated in the revised manuscript as mentioned below for each of the comments. For easy visualization, the responses to the reviewers' comments in bold are provided below

The authors studied the boundary layer structure in the Tibetan Plateau on the basis of sounding measurements in 2014 and 2019. However, there is nothing new in this manuscript, and only a few sounding profiles were presented. Most literature cited was published twenty years ago, the authors failed to clarify the motivation for the work presented. The authors tried to understand the different influence of the southern branch of the westerly wind and Asian monsoon, while the large-scale synoptic conditions were not presented and analyzed. Also, the authors mentioned the local terrain wind systems (e.g., westerly jet, glacial wind) in the Result section, while no observational evidences were presented.

Response, Thank you very much for your valuable comments

This article is just a measurement report. Its' purpose is to introduce the different characteristics of the atmospheric boundary layer structure under the coordinated action of the westerly and monsoons on the Tibetan Plateau. The experimental design selects 2014 and 2019 accordingly to carry out the observation experiment in the intensive period and analyzes the effect of the ground heating field on the atmospheric boundary combined with the ground flux observation. The influence of the structure of the atmospheric boundary layer in the westerly and monsoon periods can be revealed.

Previous studies have shown that there is glacial wind in the Mount Everest region (Zou, et al., 2007; Sun, et al., 2017; Sun, et al., 2018). In the future, model simulations will be used to further study the impact of the local circulation field on the structure of the atmospheric boundary layer. Similarly, the impact of high-altitude westerly jets can also be studied through model simulations, thereby revealing the changing mechanism of the atmospheric boundary layer structure.

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We have added nearly 20 years of relevant research as follows, and references have been added.

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