

Reply to the review reports

Dear Editor,

Thank you very much for your time and discussion on this manuscript. We also thank the referees very much for their constructive comments. We have revised the manuscript accordingly. The replies are follows:

Referees' comments:

Referee #1:

1. Should the geographical distribution of the raingauges be taken into the consideration?

Reply: The raingauges is sparse in study area due to desert and mountainous, and many observation stations are located at low elevation. missing data is a common problem in alpine. These factors are contributed the trend, So we choise stations which observed data have long-time and missing less.

2. it might be even better to discuss what the indices defined in the paper.

Reply: According to the referee's suggestion, we have reviewed other literature so that descripte the indices clearly so that understand easily to people.

3. The method of averageing some indices may need a bit more explanation.

Reply: In this manuscript, We want to detect the entire region trend used the average indices so that ignore limited within a subregion. According to the referee's suggestion, we have given bit explanation.

4. A small amount of extra revision efforts might be to further substantialise the conclusion.

Reply: According to the referee's suggestion, we have given some discussion due to data scarcity.

Thank you in advance for your time and consideration.

Yours sincerely,

Chuan-cheng Zhao