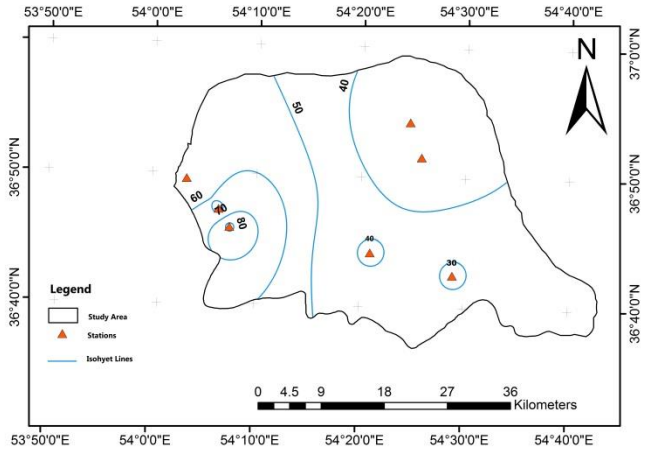
Probable Maximum Precipitation Estimation in a Humid Climate

The authors wish to thank the editors and reviewers for their time in effort in reviewing our manuscript. We hope the changes listed have made the manuscript suitable for publication and we look forward to your response.

Response to Reviewer:

Reviewer 2	
P1L12: At first, define the variable and then use the abbreviation (e.g. frequency factor; K_m).	Required description was added to the text.
P2L14-17: Too many citations..., without commenting their research Improve the syntax of the sentence.	This sentence was corrected. The sentence was corrected.
P3L16: ... of 33 years ranging from ...	It was corrected.
P4L4&5: Improve the syntax of the sentence.	It was corrected.
P5L22: Previously, you have mentioned that Km is replaced by $K_{envelope}$ value. Now you use equation 5.Please clarify this point.	It was first thought that K_m was independent of rainfall magnitude, but it was later found to vary inversely with rainfall: the value of 15 may be too high for areas of generally heavy rainfall and too low for arid areas." Because of the study area is a wet area, the value of K_m for wet areas is too high, and therefore revised approach was used to obtain the appropriate value of K_m. In order to calculate the K_m, the equation 2 was used. Then the maximum value of K_m was considered as $K_{m\text{-envelope}}$ and was used to calculation of PMP_{24}. The K_m values in standard approach were obtained from Equation 5, based on 24-h K_m chart (WMO, 2009; Hershfield, 1965). These curves obtained from 2700 stations over the USA, while in revised approach, frequency factor was obtained from observed rainfall over the study area and stations. The frequency factor in revised approach is more reasonable, for it was obtained based on real occurred rainfall over the study area and the result of corresponding PMP is closer to real occurred rainfall over the study area. Reduction of K_m in revised approach is not a reason to refuse standard approach; this shows that the standard approach estimates the PMP with more caution while estimating appropriate value of K_m is leading to decrease the cost of structures that affected by PMP.
P6L2: Discuss the differences between the two approaches.	The second approach is based on the first approach theory. The main difference between these approaches is K_m. in the first approach; K_m was obtained from the empirical chart, while in the second approach K_m is obtained from the actual rainfall in each station and considers the maximum value of K_m as a regional value of K_m for all stations.
P6Section3-2: The authors should provide the Spatial distribution of rainfall PMP24 based on physical method, as they have done regarding the other two statistical procedures.	The spatial distribution of PMP_{24} based on physical method was followed by the Spatial distribution of storm that occurred at 10/29/1993. Also, physical PMP result is an average depth for basin. Figure shows the spatial distribution of storm 10/29/1993. 
P8L1: Improve the syntax of the sentence.	The sentence was revised.
P8L1-6: This a repetition found also in section "Material and Methods"	The sentence was revised.
P8L23: The authors should provide statistical metrics such as R2, RMSE, MAE and probability of detection (POD), false alarm ratio (FAR) and	Common criteria for rainfall such as (MAE, MSE, RMSE, MAPE, R(XY), and R^2 was added to the text. Other criteria were not used because it was used for radar-based

<table>
<tr>
<td>critical success index (CSI). These metrics are important to verify the results obtained by the two applied procedures.</td>
<td>rainfall. Even based on performance criteria including MAD, MSE, RMSE, MAPE, R, and R2, physical method is more accurate than statistical method and revised approach is better than standard approach. Corresponding values of these performance criteria are mentioned below:
Statistical comparison between $(P_{24})_{max}$ and average estimated PMP_{24} values
<table>
<tr><th>method</th><th>MAE</th><th>MSE</th><th>RMSE</th><th>MAPE</th><th>R(XY)</th><th>R^2</th></tr>
<tr><td>Standard</td><td>258.2</td><td>69090.5</td><td>262.9</td><td>241.7</td><td>0.8</td><td>0.63</td></tr>
<tr><td>Revised</td><td>64.36</td><td>4311</td><td>65.7</td><td>61.2</td><td>0.9</td><td>0.86</td></tr>
<tr><td>Physical</td><td>7.1</td><td>50.4</td><td>7.1</td><td>4.7</td><td>-</td><td>-</td></tr>
</table>
Other</td>
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Thank you again for your time and effort and for helping us to improve the manuscript.