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Comment

Interactive comment on “Recent trends in daily rainfall extremes over Montenegro (1951–2010)” by D. Burić et al.

D. Burić et al.

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Dear Reviewer #1, The paper has benefited greatly from your suggestions, and we are pleased to report that we are ready to implement nearly all the suggested changes and have seriously considered all of the comments. The following pages provide point-by-point responses to all of the review comments. General comments "Writing level will be improved in all aspects including language corrections that are going to be obtained by the native speaker" Specific comments 1) Page 2348, lines 10-15: It is not necessary to describe the software package in the Abstract but it is preferable to highlight the results. Also the concerning the influence of the NAO, the authors could consider shortening the last two sentences and just describe what is the relation between the

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NAO and precipitation over Montenegro. "We accept suggestion and agree that description of software package should be removed from Abstract" 2) Page 2352, line 7: Do you actually mean "precipitation distributions" here? "Yes, it is meant precipitation distributions. Accepted and corrected." 3) Page 2352, lines 22-25: Perhaps I am missing something here but could you please elaborate on how the variable "mean rainfall" mentioned here is constructed and how its trend in (%/dec) is calculated? This is also depicted in Figure 2. In the case it is mean rainfall then the trend should be in mm/dec. Please clarify. "It is mean rainfall and the reason why its trend is expressed in %/dec instead of mm/dec is in significant spatial differences in rainfall amounts and therefore trend values. The idea was that using %/dec it will be possible to compare trends between different stations. For example increase of 20 mm/dec for Crkvice station is not significant, while the same value for Pljevlja station is significant, having in mind that Crkvice station receives annually 4600 mm, while Pljevlja station receives 802 mm. Percentages are calculated as a ratio between trend value calculated in mm for the whole period and the one calculated for the normal period (1961-1990) multiplied by 100 and expressed in %." 4) Page 2353, line 5: Please elaborate on the meaning of the "anomalies" mentioned here. "The authors meant that precipitation series showed skewed distribution, therefore non-parametric method of trend testing has been applied. However, we agree with Reviewer that the term "anomalies" is not suggesting skewed distribution, therefore it will be corrected." 5) Page 2354, lines 1-3: The material here concerning the influence of the NAO on the rainfall over the western Mediterranean is not relevant. "Accepted and corrected." 6) Page 2354, line 6: What is the definition of the "consecutive number of dry days" used in this study? Please elaborate. "It should be corrected since in our study we used number of dry days and not the consecutive number of dry days. Number of dry days, used in manuscript, is defined as a total number of days with less than 1 mm of rainfall including days without rainfall within the given period." 7) Page 2355, line 5-7: Perhaps I am missing something here but I cannot see this contrast between the eastern and western part of the country during spring. Please comment. "Accepted and corrected accordingly."

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8) Page 2356, lines 4-10: In this part of the manuscript several figures are discussed briefly. Perhaps you could consider reducing their number to the absolutely necessary to convey your message and/or move some of them in a supplement. "We agree that number of figures should be reduced to the absolutely necessary to convey highlights of the paper. Accepted and corrected." 9) Page 2357, lines 7-13: Please consider to shorten this paragraph. The focus should be on the results/conclusions in the conclusion section . "Accepted and corrected." Technical corrections 1) Page 2348, line 19: Please replace "in the Mediterranean" with "over the Mediterranean" and similarly throughout the text. "Accepted and corrected." 2) Page 2348, line 19: "serious implications on the environment, society and economic sectors" -> "serious environmental, societal and economic impacts." "Accepted and corrected." 3) Page 2348, line 21: "Kostopoulu" -> "Kostopoulou" and similarly throughout the manuscript. "Accepted and corrected." 4) Page 2348, line 23-24: I have difficulties to understand the sentence "Agricultural ... implicate farming". Please rephrase. "Accepted and corrected." 5) Page 2349, line 3: "for whole" - > "for the whole". "Accepted and corrected." 6) Page 2349, line 4: Delete "(95% confidence level)" "Accepted and corrected." 7) Page 2349, line 6: "wet day amounts" - > "wet days amounts" "Accepted and corrected." 8) Page 2349, lines 7-8: Please rephrase the sentence "Authors.... Spatial pattern". Something is missing. "Accepted and corrected." 9) Page 2349, lines 14-15: "Other regions... also showed tendency..." -> "A tendency towards drier conditions but also for extreme rainfall has been identified over other regions across the Mediterranean, including Italy, the Balkans, Cyprus and Israel." "Accepted and corrected." 10) Page 2349, line 24: "Recent study of ..." -> "Recently, Ziv et al. (2014)...". 11) Page 2350: line 5: "increased 1.8 %" - > "increased by 1.8 %". "Accepted and corrected." 12) Page 2350, line 7: "precipitation days" > "wet days" ? "Accepted and corrected." 13) Page 2350, lines 8-13: This paragraph could be written as follows: This study aims at the investigation of trends in rainfall extreme indices over Montenegro and their spatial patterns using web mapping techniques. Following the study by Buric et al. (2011) that postulated a link between the North Atlantic Oscillation (NAO) and rainfall over Montenegro, here we quantify the

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influence of the NAO on the rainfall extreme indices.” ”Accepted and corrected.” 14) Page 2350, line 22: “the area” -> “an area” ”Accepted and corrected.” 15) Page 2350, line 27: “varies a great deal from” -> “ranges from...” ”Accepted and corrected.” 16) Page 2353, lines 10-11: This sentence could be rephrased as follows: “As a proxy for the North Atlantic Oscillation, we use the NAO difference between Iceland and Azores.” ”Accepted and corrected.” 17) Page 2352, line 20: What do you mean by “within the indices” ? It means that Sen’s method has been used for trend slope estimating while calculating rainfall extreme indices trend. 18) Page 2352, line 25: Please rephrase “Normal 1961-1990”. ”Accepted and corrected.” 19) Page 2353, line 16: “bar graph” -> “bar graphs”. ”Accepted and corrected.” 20) Page 2353, lines 18-19: “at 95%” -> “at the 95%”, “by black line” -> “by black lines”. ”Accepted and corrected.” 21) Page 2353, lines 23-24: “in Mediterranean region of the country” -> “near the Mediterranean coast of the country”. ”Accepted and corrected.” 22) Page 2353, lines 26-27: “Similar pattern” -> “A similar pattern”, “is shown by...” -> “was found by ...”. ”Accepted and corrected.” 23) Page 2354, line 18: “on spring” -> “during spring” and also correct throughout the manuscript. ”Accepted and corrected.” 24) Page 2354, line 11: “future drought” -> “future drought conditions”. 25) Page 2355, line 21: “concentrate” -> “we concentrated”. ”Accepted and corrected.” 26) Page 2355, line 23: “of North-Atlantic storm tracks” -> “associated with the North Atlantic storm track” ”Accepted and corrected.” 27) Page 2356, line 1: “West Europe” -> “western Europe”. 28) Page 2357, lines 16-18: Please rephrase this sentence. ”Accepted and corrected.” 29) Page 2363: “Locations of the stations” -> “Location of the stations and elevation of Montenegro.” ”Accepted and corrected.”

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