

## ***Interactive comment on “Spatial distribution of the daily precipitation concentration index in Algeria” by B. Boucherf et al.***

### **Anonymous Referee #2**

Received and published: 3 October 2014

The entitled paper ““Spatial distribution of the daily precipitation concentration index in Algeria” presents a spatial analysis of precipitation based on the daily precipitation concentration index over western Mediterranean. The topic is very interesting, the methodology is coherent but the manuscript requires substantial revisions towards paper improvement and clarifications before publication. I suggest the publication of the manuscript after a Major Revision.

GENERAL COMMENTS Suggested modifications:

The manuscript should be restructured as follows: 1) Introduction, 2) Area of Interest (or Study Area), 3) Data and methodology, 4) Results and discussion and finally the section of Conclusions.

C2194

Introduction: The authors referenced in a number of recent and relevant studies related to the statistical structure of precipitation with daily resolution over the Mediterranean basin and over other worldwide locations, but they don't provide any element or evidence obtained from those studies. Thus, it is recommended to include the most important findings from those studies in the introduction in order to link their study with the other studies. The aim of this study (main purpose of the study) should be highlighted in this section.

In the second suggested section (Area of study) authors are encouraged to provide details regarding the area of interest (topography, etc.), enriched with a climate analysis of Algeria (influence of Mediterranean water reservoir and Saharan desert). Fig.1 is suggested to fulfil this section with all geographic names and relevant boundary lines (e.g. Illizi, Adrar, Biskra, Hoggar, Skidra and several others) that you mention in the text should be added in this updated figure.

In the section of “Data and methodology” authors should provide any details regarding the homogeneity process tests and details about the quality or gap periods of their data. In addition, authors are suggested to provide some details regarding the meteorological stations (the meteorological stations are from the network of Algerian meteorological service?). In this section authors should mention that they conducted a correlation between the concentration index and the parameter study, but the results (and Table 4) of correlation should be moved to Section “Results and Discussion”.

The sections of “4 Regionalization of the concentration index CI in Algeria” and “5 Comparison between concentration index CI results in Algeria and other countries” should be included in the section of “Results and Discussion”. Thus the manuscript is more coherent.

SPECIFIC COMMENTS:

Page (P) 2710, Line (L) 10: The last sentence should be shifted to the beginning of the “Abstract” section.

C2195

Although authors in the abstract section defined as CI the concentration index, through the text they didn't follow this and they used both the definition and the abbreviated term (e.g. P2711 L4,P2713 L14, P2715 L14 and L18, P2717 L19, L21, L23, P2718 L1, L6, L12). Please adopt either the definition or the abbreviation.

P2710 L14: The sentence "This type of .... (Cortesi et al., 2012)" is too long, please rephrase it.

P 2711, L 1: Please move the sentence "Statistical analysis was ... rainfall" to the next paragraph.

P 2711, L 8: "... (14245 days)...", Please check this number

P 2711, L 14: You must close the parenthesis

P 2711, L 18: "...and column two shows..." Please rewrite as "... and the second column shows ..."

P 2712, L 6: Please add that Fig.2 presents the result of Chlef meteorological station

P.2715, L8: Authors are suggested to move the paragraph "Whatever the variable ... and relief inclination" to the new section of Area of Study.

P.2715, L 24: Please define with months the rainy season you mentioned

P 2717, L 7: Please define the pairs of variables at this point

P 2718, L 15: The sentence "The Saharan Africa ... the land arid." Is too long, please rephrase it.

P 2718 L22: Please replace "torment" with "storm"

#### TABLES:

Table 1: Please provide a detailed definition for all columns

Table 4: Please define P, CV and N

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#### FIGURES:

Fig. 3: Please define S' and S

Fig.4: Please add the study period. Also add details regarding the interpolation method. Also, the interpolation method should be added in the section of "Data and Methodology".

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 2709, 2014.

C2197