

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

Anonymous Referee #1

Received and published: 25 April 2014

Below is my review of the manuscript entitled "Spatial distribution of the daily precipitation concentration index in Algeria". The article talks about a spatial analysis of daily precipitation. This is an interesting climate and physical geographical description of spatial variability of rainfall within the western Mediterranean region. The manuscript contains a high scientific quality, and methods and results are coherent. Nevertheless, there is an important weakness on the structural composition when reading the paper. Furthermore, some mistakes in English writing are easily detected. I recommend the publication of the manuscript after a Major Revision.

GENERAL COMMENTS

From my point of view, a full description of the study area is missing in the paper. It

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is important to explain that environment and climate in Algeria. The authors should highlight or reinforce the idea why Algeria is a suitable region for the study of the CI in daily rainfall. Furthermore, the main objectives of the study are not properly exposed.

Methodology must be shortened. Most of the statistical analyses on CI are already and widely explained in previous articles (e.g., Martin-Vide, 2004). In the methodological section, authors should focus on describing quality, gaps and periods of daily data. Those homogeneity tests applied to assess quality data would be also welcome in this section. They should also include those standard qualitative categories (high, moderate, low, etc.) associated to the several ranges of CI values.

Section 4 on regionalization might be deleted. Its content could be included in methods and results sections. Overall, a standard structure is missing in the paper. The article may follow as: 1) Introduction; 2) Study area; 3) Methods and data; 4) Results and discussion; 5) Conclusions.

The mapping process should be described in the methodological section. For instance, the interpolation method used (Kriging, Spline, IDW, etc.) in Figure 5 could be included in this section. The use of those statistical correlations in 4.2 must be exposed in the methodological section too.

The content of section 5 could be included in the section of "Results and discussion" in order to make the discussion stronger. Moreover, authors could write some comment about the hazards involved in those Algerian regions under the highest values of CI.

Overall, some references could be added in the "Introduction" and the "Results and Discussion" sections.

SPECIFIC COMMENTS

Line(L)8Page(P)2: Please delete "(average of 0.61)". L8P2: Where's Biskra? Is it an Algerian region? L10-13P2: The last sentence should be shifted to the beginning of the "Abstract". It should be the second sentence after "... has been assessed". L6-10P3:

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These lines should be included in the next section. That section could be rewritten as “Methods and data”. L21-22P3: Please rephrase the following sentence: “The rainiest day had between...”. L1-13P6: This paragraph could be used to describe the study area in the “Introduction” or in a new section entitled “Study area”. L14-20P8: These sentences are almost the same text than those sentences in L21-27P8. Please remove one of the two paragraphs. Figures 1 and 4 must be merged. A digital elevation model (DEM) of Algeria is highly recommended to be included in this new figure. The authors mention along the article the high importance of the role of the orography in determining rainfall variability and CI spatial distribution (e.g., L9-10P11: “Tracing isohyets are also largely determined by the topography of the ground”). The names of the main physical geographical units (i.e., ranges, desert, valleys, etc.) must be written in the map. Most readers will not probably know where the Algerian regions are located (e.g., Biskra, Hoggar, Aures, etc.). Figure 5 could include an overlaid DEM too. The inclusion of isolines in this figure would be highly appreciated for making out better the intervals of CI values.

TECHNICAL CORRECTIONS

L14P3: You must close this parenthesis somewhere “(Table 1...”. L18P3: Please add “or centre of class” after “their midpoints”. L27P3: Please delete “center of class or”. L26P7: Please rephrase this last sentence. L13P8: Please add “, westernmost region” after “in Tindouf”. L12P9: Please replace “concentrations” with “means”. L18-19P10: Please rephrase the following sentence: “, quantities... .arid”. L22P10: Please substitute “torment” for “storm”. L10P11: Please replace “ground” with “surface”. L2P15: Please substitute “rainy” for “rainiest”.

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