Nat. Hazards Earth Syst. Sci. Discuss., 2, C2506–C2508, 2014
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Natural Hazards and Earth System Sciences
Discussions

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

B. Boucherf et al.

hydr21@yahoo.fr

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We agree and have made corrections you asked. Thank you for your help.

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

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Interactive Discussion

Discussion Paper

Nat. Hazards Earth Syst. Sci. Discuss., 2, C499–C501, 2014
www.nat-hazards-earth-syst-sci-discuss.net/2/C499/2014/

Natural Hazards and Earth System Sciences
Discussions

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

Fig. 1.

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Interactive Comment

SPATIAL DISTRIBUTION OF THE DAILY PRECIPITATION CONCENTRATION INDEX IN ALGERIA

A. Benhamrouche[2], D. Boucherf[1], R. Hamadache[1], L. Bendahmane[1], J. Martin-Vide[2], J. Teixeira Nery[3]

[(1)] National Climate Centre at ONM, avenue Khemisti B.P 153 Dar el Baída Algiers (Algeria)
[(2)] Climatology Group, University of Barcelona. C / Montalegre 6, 08001 Barcelona (Spain)
[(3)] Department of Geography, Unesp – Ourinhos, avenue Vitalina Marcusso, 1500, SP, Brasil.

Correspondence to: Aziz Benhamrouche (hydr21@yahoo.fr).

Abstract. In this paper, the spatial and temporal distribution of the daily precipitation Concentration Index (CI) in Algeria (South Mediterranean Sea) has been assessed. CI is an index related to the rainfall intensity and erosive capacity; therefore, this index has great interest for studies on torrential rainfall and floods. Forty-two daily rainfall series based on high quality and fairly regular rainfall records for the period from 1970 to 2008 were used. The daily precipitation concentration index results allowed identifying three climatic zones: the northern country, characterized by coastal regions with CI values between 0.59 and 0.63, the highlands, with values between 0.57 and 0.62, except for the region of Biskra (CI= 0.70), and the southern region of the country, with high rainfall concentrations, with values between 0.62 and 0.69.

Keywords: Concentration Index, daily precipitation, Mediterranean Sea, Algeria.

1. Introduction

The rainfall analysis with daily resolution in Algeria is a subject of great interest. This type of analysis is justified by the existence of severe environmental hazards, such as floods and soil instability, in the Mediterranean, resulting from the high percentages of annual total precipitation falling in a limited number of very rainy days. Thus, the area presents long periods of drought (Martin-Vide, 1994) and irregular temporal rainfall distribution in large areas of the western Mediterranean (Cortesi et al. 2012).

The interest is not only focused on climate, but also on the effect of heavy rainfalls on other areas of the environment and society. However, the importance of daily precipitation has not been sufficiently studied. Only a few papers on the statistical structure of precipitation with daily resolution have been published. For example, the study of the Mediterranean basin (De Luis et al. 1996, 1997, Martin-Vide, 2004; Sánchez Lorenzo and Martin-Vide, 2006; Benhamrouche and Martin-Vide, 2011, 2012;

Fig. 2.

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