

Paper: **“Rainfall-runoff modeling using artificial neural networks in the Mono River basin (Benin, West Africa)”**

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Peer review:

Reviewer 1: Ahmed Aberqi
Sidi Mohamed Ben Abdellah University, Morocco

Reviewer 2: Blinded

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Reviewer Name: Ahmed Aberqi	
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Date Manuscript Received: 9 august 2024	Date Review Report Submitted: 15 august 2024
Manuscript Title: Rainfall-runoff modeling using artificial neural networks in the Mono River basin (Benin, West Africa)	
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Please give each evaluation item a numeric rating on a 5-point scale, along with a thorough explanation for each point rating.

Questions	Rating Result [Poor] 1-5 [Excellent]
1. The title is clear and it is adequate to the content of the article. <i>(Please insert your comments)</i>	5
2. The abstract presents objects, methods, and results. <i>(Please insert your comments)</i>	4
3. There are a few grammatical errors and spelling mistakes in this article. <i>Some typo mistakes that should be corrected.</i>	3
4. The study methods are explained clearly.	2

<i>More details can improve the used method, like for the pretreatment. How do you transform the time series into a supervised learning series? What is the function that can do that?</i>	
5. The results are clear and do not contain errors.	4
<i>(Please insert your comments)</i>	
6. The conclusions or summary are accurate and supported by the content.	4
<i>(Please insert your comments)</i>	
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Overall Recommendation (mark an X with your recommendation) :

Accepted, no revision needed	
Accepted, minor revision needed	x
Return for major revision and resubmission	
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Comments and Suggestions to the Author(s):

- 1. Page 1, in the abstract**, “the impact of the Nangbéto dam on the flows at Athiéomé”: You are only using old data before the dam was built, so you are not doing this part of the analysis.
- 2. Page 1, in the abstract**, “The results obtained after the training, validation, and testing of the ANN models are very good”: What do you mean by very good? We cannot use these terms in scientific writing. You should put how good your model is (How accurate it is)!
- 3. Page 3, in the introduction 1st sentence in page 3**, You just mentioned some of the other studies that are doing something similar, so there is no gap. So, it is not a strong motivation, but you can motivate your work by highlighting the differences between previous research!
- 4. All equations used in the paper should be centered.**
- 5. After equation 1, continue the sentence after the “where”.**
- 6.** How do you transform the time series into a supervised learning series? What is the function that can do that? Would you give more details?
- 7. Page 13, after Table 3, you are saying that the MSE is very low. We can say that** The MSE is low because the error order is between 10^{-1} and 10^{-2} , but not very!
- 8. You are using the Nash–Sutcliffe model efficiency coefficient (NSE)?** and you can recall its form!
- 9. Page 14, the first paragraph:** This comparison would have been better if you put it in the state of the art to show what you are doing differently. In the results section, you should only show and elaborate on your results.
- 10. In the conclusion, the first sentence**, “**The main contribution of this paper was to assess ANN rainfall-runoff models under different input meteorological parameters for a better understanding of the hydrological behavior of the Mono River basin.**”: The main contribution of this paper is...., the assess verb does not sound right!!

11. **The last sentence of the conclusion, “considered good alternatives for modeling non-linear hydrological applications, such as the rainfall-runoff process.”: For saying this did you use the same dataset with other models**

Comments and Suggestions to the Editors Only: