Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2017-707-AC1, 2018
© Author(s) 2018. This work is distributed under
the Creative Commons Attribution 4.0 License.

Hydrology and Earth System Sciences
Discussions
Open Access

Interactive comment on "A comprehensive study of new hybrid models for Adaptive Neuro-Fuzzy Inference System (ANFIS) with Invasive Weed Optimization (IWO), Differential Evolution (DE), Firefly (FA), Particle Swarm Optimization (PSO) and Bees (BA) algorithms for spatial prediction of groundwater spring potential mapping" *by* Khabat Khosravi et al.

Khabat Khosravi et al.

panahi2012@yahoo.com

Received and published: 6 April 2018

Thank you so much for your positive and valuable comments. This document explains the changes made in the revised manuscript while dealing with the comments raised

Printer-friendly version

Discussion paper

by the reviewers.

Comment 1: I think title of the mentioned research is very long; please authors try to decrease it.

Answer: Thanks for you valuable comment. Authors agree with you, the title has been shortened as follows: A comprehensive study of new hybrid models for ANFIS with five meta-heuristic algorithms (IWO, DE, FA, PSO, BA) for spatial prediction of groundwater spring potential mapping.

Comment 2: In abstract, your means from curvature is which one? Plan or profile?

Answer: Our mean is plan curvature which was corrected from throughout the paper.

Comment 3: In abstract, what is your means from soil order?

Answer: To identify, understand, and manage soils, soil scientists have developed a soil classification or taxonomy system. Like the classification systems for plants and animals, the soil classification system contains several levels of detail, from the most general to the most specific. The most general level of classification in the United States system is the soil order, of which there are 12 (such as Alfisols, Aridisoils, and etc.). Each order is based on one or two dominant physical, chemical, or biological properties that differentiate it clearly from the other orders.

Comment 4: Results of models are very similar together. Please edit results of lines 33-35.

Answer: Thanks for this valuable comment. The sentences have been corrected as : Although the results of performed models are close to each other, but ANFIS-DE has the highest prediction capability (0.875) for groundwater spring potential mapping in the study area, followed by ANFIS-IWO and ANFIS-FA (0.873), ANFIS-PSO (0.865) and ANFIS-BA (0.839).

Comment 5: Please add a reference in lines 118-119 for rainfall descriptions.

CC BY

Answer: The proper references have been added as ‘’Lorestan Weather Bureau report, 2016”

Comment 6: Quality of Fig. 2 isn’t proper. Please draw it again.

Answer: This Figure was draw again and added to the paper.

Comment 7: Please add source of groundwater spring inventory map

Answer: The proper source have been added: a total of 2463 springs were selected from documentary source (Iranian Water Resources Management) and considered for modeling.

Comment 8: Please explain about classification of different layers or at least add some citations for the mentioned classifications.

Answer: Some references have been added to the sentences as the following: The process of converting continuous variables into categorical classes were carried out using frequency analysis of springs location (Khosravi et al, 2018; Ahmadisharaf et al., 2016) in order to define the class intervals (Bui et al., 2011).

Comment 9: Fig. 3 (j) and 3 (m) what are codes?

Answer: Thank you for your precis attention. it was corrected and considered at the paper the authors corrected it on the paper in a simple way and avoid from the description on the table.

Comment 10: According to Table 2, I think it isn’t a land use map, it is land cover. Please change its name or present land use/land cover

Answer: Thank you for your precis attention; it was corrected to land-use/land-cover throughout the paper.

Dear Editor and reviewers: Thank you so much for your viewpoints and comments in regarding our manuscript. I hope the emendations caused to consent the respected

CC BY

reviewer and editor-in-chief and made my paper well qualified for publication.

Please also note the supplement to this comment:
https://www.hydrol-earth-syst-sci-discuss.net/hess-2017-707/hess-2017-707-AC1-supplement.pdf

---

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2017-707, 2018.