

## ***Interactive comment on “A novel method of sensitivity analysis testing by applying drastic method and fuzzy optimization method to assess Groundwater vulnerability to pollution, case of Senegal River basin in Mali” by Keita Souleymane and Tang Zhonghua***

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Received and published: 18 May 2017

Response to Referee 1 Groundwater is very important for people living in this part of the Senegal River Basin. In recent years, under the combined effect of pollution from various sources and climatic variability, these resources are becoming more and more vulnerable. This study which is one of the few on this part is very important and would serve as I am certain decision-making tool. In many countries, the most widely used DRASTIC model has proved to be a relevant tool for assessing the vulnerabil-

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ity of groundwater. Moreover, a comparison between the DRASTIC method (which evaluates intrinsic vulnerability) and the fuzzy method (which evaluates the specific vulnerability taking into account the continuity of the parameters) is very relevant. This comparative study is a new concept in this part of the Senegal River basin and the article presents interesting results. In this study, the methods used to know the DRASTIC and Fuzzy are very clear and precise and the results are relevant. The different data used are sufficient and representative in the study area. The methodology and assumptions are clear and understandable and the results are well interpreted and highlighted. The title and extract are relevant and easy to understand for a broad and diverse audience, the article is written in a technical language that is clear and understandable to other scientists.

Response: The authors would like to thank the referee for the valuable comments, the very positive evaluation of our manuscript and the provided feedback given on this paper.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2017-116, 2017.

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