

# ***Interactive comment on “Identifying ENSO Influences on Rainfall with Classification Models: Implications for Water Resource Management of Sri Lanka” by Thushara De Silva M. and George Hornberger***

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Comments on “Identifying ENSO Influences on Rainfall with Classification Models: Implications for Water Resource Management of Sri Lanka” by Thushara De Silva M., George M. Hornberger:

In this paper, the authors investigate the prediction of seasonal rainfall in Sri Lanka from a machine learning perspective. The rainfall has been grouped into three classes: dry, average, and wet, in accordance with the amount of precipitation. The paper is well

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organized, the structure is easy to follow, and it is a good attempt in utilizing machine learning to develop data-driven models to predict the level of precipitation over each season in the future. I suggest to address the following points before the paper can be published:

1. How to justify the selection of range of precipitation when grouping the rainfall into three classes?
2. When you choose the predictors, what is the rationality in choosing the Multivariate ENSO Index (MEI) and the Indian Ocean Dipole (IOD)? As you illustrate later, the prediction performance of the trained algorithm is not very good. May I interpret the poor performance is caused by the selection of non-informative predictors? If yes, should you consider using more informative indicators as the input of the model instead of MEI and IOD?
3. Is there any possibility to give the confidence level when making the prediction? You should also demonstrate the correlation between IOD, EMI and the quantity of interest.
4. With the prediction from the trained model, how will it facilitate the decision making in the water infrastructure management? Considering the prediction performance of the trained model, what is the risk the decision maker must carry on when making the decision? Is there any possible means to reduce the risk involved in decision making?
5. It will be better if you can highlight the contributions you have made in this paper with several bullets. This will help readers to quickly grasp the highlights in your paper.

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