
This study applied several machine learning models to streamflow forecast and investigated the model explanation with SHAP. The study is of potential value due to the unique features of hydrological process in Pakistan basins. However, the writing requires careful revision. And the contribution of this study should be further strengthened. I have the following comments for the authors’ consideration.

Line 4-5 "Given the catchment characteristics, there is an utmost need to develop machine learning models that are hydrologically robust". The logic is not convincing. Why there is an utmost need to develop machine learning models under the described catchment characteristics?

Line 5-8 Please split it into two short sentences.

Line 12 "We strongly believe....". In my personal opinion, it’s better to remove emotional word.

Line 43 "Data-driven". The initial should be lower-case.

Line 68 "These streamflows are highly seasonal, variant, and prone to extreme events and climate change". I agree with the authors. The catchments in Pakistan have some special features. Development of machine learning for these catchments provides good chance to explore the potential of machine learning technique. It’s better if the authors could expand the challenges of machine learning on modeling the streamflow in these catchments. In other words, does the machine learning have the potential to forecast streamflow which may be highly seasonal, variant, and prone to extreme events and climate? It is an
interesting point to attract the readers and an important contribution for hydrological modeling.

Line 69 Please correct the citation format

Line 87-117 The authors summarized the existing studies of several machine learning models. It will be better if the features (advantages and disadvantages) of these models could be briefly summarized.

Line 118 It is weird to set a “1.1 Hydrologic interpretation” in the Introduction section. I suggest to remove the subtitle.

Line 139 There is typo

Line 131-137 These two paragraphs can be merged.
Line 177-185 Please merge these paragraphs.
Line 187 Please reorganize this sentence.

Line 363-366 Please reorganize this long sentence.

Figure 6 Please reorganize this figure to make it more formal.

Figure 7-9 Is it possible to specifically display the comparison under extreme events and climate (or other unique conditions in Pakistan) during 2005-2014? The long-term comparison in one figure may cover some interesting streamflow patterns, which however can be the new finding of this study.