**Major Comments**

1. **Critical Analysis of Previous Studies**:  
   **comment:** The authors have summarized previous studies one-by-one but have not critically analyzed them to discuss research gaps, significance, and novelty of this research. The introduction section needs to be revised to be more coherent and comprehensive.  
   **reply:** We have extensively revised the Introduction Section to include a critical analysis of previous studies. This includes discussing the research gaps, the significance of our research, and our main contributions and novelty in advancing the field. (lines 20-70)
2. **Details on DL Methods and Hyperparameter Optimization**:  
   **comment:** The authors must discuss quantitative details of the deep learning methods, their structure, and parameters adopted for hyperparameter optimization. How was the genetic algorithm connected with the DNN algorithm? What was the range of various parameters used in the genetic algorithm? Figure 5 can be improved with a better representation of the DNN model architecture.  
   **reply:** We have included detailed quantitative information on the deep learning methods and hyperparameter optimization. We elaborated on the connection between the genetic algorithm and the DNN, including the parameter ranges and criteria used. Figure 5 has been revised. (lines 165-216)
3. **Accuracy of Predictions for Manila Floods**:  
   **comment:** The accuracy of the Manila Floods predictions is significantly lower than that for Ibadan Floods. Are the DNN predictions for Manila reliable? Discuss the implications of data quantity and quality on model training and results.  
   **reply:** We have added a detailed discussion on the accuracy of the Manila Floods predictions, addressing the reliability of these predictions and the implications of data quantity and quality on model training. We provide logical reasoning for the observed differences in model performance between the two case studies. (section 3.2)
4. **Significance of DNN-Based Assessment vs. Hydraulic Modeling**:  
   **comment:** Discuss the significance of DNN-based flood assessment compared to physics-based hydraulic modeling. Why should stakeholders consider DNN-based assessment?  
   **reply:** We have included a discussion comparing DNN-based flood assessment with physics-based hydraulic modeling. We outline the advantages of DNN-based approaches, including their applicability and benefits over traditional hydraulic models, which require calibration and validation. (section 4.1, 4.2)
5. **Additional Analysis and Evaluation**:  
   **comment:** The current results are insufficient. The authors are suggested to perform more analysis and evaluation of different scenarios and discuss their results.  
   **reply:** We have conducted additional analyses and evaluations of various scenarios. These results are now discussed in greater detail within the manuscript, providing a more comprehensive view of the findings. (section 3.2)

**Minor Comments**

1. **Abbreviation Definitions**:  
   **comment:** The full names of “RMSE, NSCE, and MAPE” were not introduced before their abbreviations. Define abbreviations in their first appearance.  
   **reply:** We have revised the manuscript to define all abbreviations such as RMSE, NSCE, and MAPE at their first appearance in the text.
2. **Maps in Figures**:  
   **comment:** Represent a map of the country including the study area in Figures 1 and 3.  
   **reply:** Figures 1 and 3 have been updated to include maps of the respective countries with the study areas clearly highlighted. (figure 1 and 3)
3. **Computation Time**:  
   **comment:** Discuss the computation time for each studied case of each DNN model.  
   **reply:** We have added a discussion on the computation time for each studied case and DNN model, providing insights into the efficiency and performance of the models.(lines 224-232)