

Interactive comment on “Integrating Multi-Media Models to Assess Nitrogen Losses from the Mississippi River Basin to the Gulf of Mexico” by Yongping Yuan et al.

Anonymous Referee #1

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In this manuscript, the IMS framework was developed to incorporate multiple models such as the SWAT, WRF, EPIC, and etc. In general, the manuscript is well-written. On the other hand, I would like to see more details/rationales about the framework: 1. The first issue is the selection of different models. It seems that the combination of SWAT, EPIC, WRF, and others are more or less a subjective decision. Can you elaborate why these models are chosen in the first place? Otherwise, maybe we can also do the same thing by using HSPF or perhaps other models. 2. In the current format, we can find EPIC, WRF, and CMAQ in Section 2.2. I suggest allocating them into subsections such as 2.2.1, 2.2.2, and 2.2.3, instead. 3. As mentioned in 2.7 that the given work was not validate through calibration process. It can be problematic since

C1

it may be difficult to evaluate the corresponding performance of the given framework. I'm not saying the authors have to conduct additional work on calibration. However, I believe more justifications are required to alleviate the associated concerns. 4. I suggest separating the Conclusions and Future Work to independent sections, since the developed framework will be very useful to most readers and they may want you to elaborate more ideas and potential opportunities in the near future. 5. The quality of Figure 3, 4, 7, and 8 should be further enhanced in the next round. The current format is very much the version of default settings from Excel.

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C2