Natural fluctuations in the river are essential to the ecosystem productivity of basins. Which has less been investigated in the dammed Mekong River Basin. In view of this, this manuscript integrated a framework consisting of hydrological model, 3D hydrodynamic model, response time to address this issue. Results show that significant fluctuations in the river's daily flow were evident before the advent of the era of human activities. Further, the sub-basins were found to significantly contribute to mainstream discharge fluctuation. Overall, this manuscript is interesting, which can attract a lot of attention from readers. However, there were still some drawbacks before it is published on this journal and were listed below for references.

Major comments:

(1) The author stated that "research on the daily assessment of large river flow alterations is limited, with most researchers focusing on monthly, seasonal, and annual scale studies." (lines 59-60), which could be hard to make readers convinced. Many studies related to the discharge or floods (especially for floods) in the Mekong River Basin focused on daily scale, such as Wang et al., 2017, Wang et al., 2021 (listed by authors as references in the manuscript), Try et al. (2020), Yun et al. (2024). The word "most" could be not proper. More importantly, there should be an overview of researches on daily assessment of river flow before stating the lack of daily assessment of large river flow alterations.

Try, S., Tanaka, S., Tanaka, K., Sayama, T., Oeurng, C., Uk, S., ... & Han, D. (2020). Comparison of gridded precipitation datasets for rainfall-runoff and inundation modeling in the Mekong River Basin. PLoS One, 15(1), e0226814.
Yun, X., Song, J., Wang, J., & Bao, H. (2024). Modelling to assess the suitability of hydrological-hydrodynamic model under the hydropower development impact in the Lancang-Mekong river basin. Journal of Hydrology, 131393.

(2) The description for data was simple. Data from seven stations extending from Chiang Saen (CS) to Kratie (KR) stations were collected, however, these stations were not clearly marked in Figure 2 (only with red circles, no name was shown). This could have an impact on readers who were not familiar with this basin. In addition, the authors said that they collect many meteorological and precipitation data, but no spatial map for these sites was shown or information for these sites was revealed. It was worthy to note that the description for meteorological and precipitation data should be placed in 2.2.1, instead in 2.2.2.

(3) The methods were described relatively simple, with many confusions left, though the supplement information also contained some basic information. Firstly, readers did not know how authors calibrated the THREW model and the Delft-3D flow model, who also did not know what the parameters and inputs for these models were. Secondly, people also did not know how authors inputted the outputs of THREW model to Delft-3D flow model. I guessed that the authors used the simulated discharge near the mainstream to input to the hydrodynamic model. More importantly, how author used the meteorological data to prepare the inputs of THREW model remained uncleared (e.g., interpolating the meteorological data from in-situ scale to gridded scale).

(4) I noticed that the author used discharge to calculated the contribution to discharge, then why the hydrodynamic model was used in this manuscript. Many studies have shown that the hydrological model can well produce the discharge upstream Kratie. The author can only used hydrological model to make analyses. By the way, I am not sure why the author analyzed the velocity, which could be not important as discharge.

(5) Delft-3D flow model is a small-scale hydrodynamic model, how could author apply this model to the large basin (i.e., Mekong River Basin).

(6) The authors used "sub-basin" and "upstream station" terms many times in Section 3. For a given station, what did "sub-basin" and "upstream station" refer to. For example, in Figure 7, what did "upstream station" and "sub-basin" refer to for "PA". Could I think the "upstream station" was the nearest upstream station for a given station.

(7) The legends in Figures 9, 10 were missing. In Figure 9, what did red line, grey and blue bars represent. In Figure 10, what did the x-axis represent, For CS, why did eight bars occur. and then what did the red line represent.

Minor comments:

(1) Line 63: Usually，the trend of discharge change is similar to that of water level. Here, I am not sure why discharge increased by 98% while the water level decreased by -1.55m.

(2) Line 88: The length of the Mekong River needs further confirmation. It seems that 4500km is not a commonly used result. According to MRC (2006), the correct value is 4800km. Further, "Mekong River constitutes the third most diverse aquatic ecosystem", what were the first and second most diverse aquatic ecosystem. Mekong River should not be the second most diverse aquatic ecosystem (just followed by Amazon River Basin)?

MRC, 2006. Annual Flood Report 2005. Mekong River Commission, Vientiane, Lao PDR, p. 82.

(3) Lines 96-97: The authors took June-December as the wet season, while took November-May as the dry season. This was not consistent with the facts. Actually, the flood season is from June to December for Mekong River Basin, while wet season is from May to October (see Räsänen and Kummu, 2013, Wang et al., 2022 for reference)

Räsänen, T. A., & Kummu, M. (2013). Spatiotemporal influences of ENSO on precipitation and flood pulse in the Mekong River Basin. Journal of Hydrology, 476, 154-168.

Wang, J., Tang, Q., Yun, X., Chen, A., Sun, S., & Yamazaki, D. (2022). Flood inundation in the Lancang-Mekong River Basin: Assessing the role of summer monsoon. Journal of Hydrology, 612, 128075.

(4) Line 226: how authors defined the daily river flow alteration, whether the authors using the water level in the next day minus that in the current day.