

Clim. Past Discuss., referee comment RC1
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Comment on cp-2021-121

Anonymous Referee #1

Referee comment on "Water level change of Lake Machang in eastern China over 1814–1902 CE" by Jie Fei, Clim. Past Discuss.,
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The manuscript entitled "Water level change of Lake Machang in eastern China during the past 200 years" is about the reconstruction of the water level change in AD1814–1902 and the evolution history of Lake Machang by using pre-modern monthly water level observations. The research idea is novel, the findings are sound, and the manuscript is also well-written. Therefore, I would recommend this manuscript be accepted for publication.

There are a few suggestions to the author:

Line 36: "Historical reservoir evolution is a promising subfield of climatic change studies." This is an eye-catching statement. But, the findings in this study show that the historical reservoir (i.e., Lake Machang) is subject to the strong influence of human activities. To what extent could historical reservoirs reflect climate change?

Lines 100–103: "The average monthly water level variability of Lake Machang in the period of 1814–1902 AD was compared with that of Jining City in the period of 1951–2000 AD (Figure 5). We found that the monthly water level responded well with precipitation but with a time-lag of 2 months." Please show how to calculate the time-lag.

Lines 135–146: This paragraph shows that the changes in the water level in Lake Machang are site-specific in nature. So, how to link the findings in this study to climate change, which is a macro-regional phenomenon? Besides, apart from precipitation, would the changes in water level in Lake Machang be caused by other natural factors such as the changes in temperature, monsoon, or ocean/atmospheric circulation?

Lines 233–236: Perhaps it could be more specific in stating what people could learn from the history of Lake Machang.

Figure 2: The three panels could be combined into one.

Figures 3, 4, and 6: The annual mean water levels of Lake Machang in 1814–1902 could be put into the figure for comparison.