

## ***Interactive comment on “Stable carbon isotope as a proxy for the change of phytoplankton community structure in cascade reservoirs from Wujiang River, China” by B. Wang et al.***

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Response to general comments: Based on the principle of statistics, it is no doubt that there was a significant relationship between the contribution of Bacillariophyta to the total phytoplankton (CBTP) and  $\delta^{13}\text{C}$  of PPC or  $\Delta\delta^{13}\text{C}$  ( $\delta^{13}\text{C}$  of PPC –  $\delta^{13}\text{C}$  of DIC), respectively (Fig. 5). This relationship was obtained from the behaviors of all the dots in the Fig. 5, and the behaviors of a few dots in the Fig. 5 can not reflect correctly the relationship between phytoplankton composition and  $\delta^{13}\text{C}$  or  $\Delta\delta^{13}\text{C}$ . So, the relationship between phytoplankton composition and  $\delta^{13}\text{C}$  or  $\Delta\delta^{13}\text{C}$  is strong enough to reveal the change of phytoplankton community structure in cascade reservoirs from Wujiang

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River, China, in my own opinion. Further studies are needed to confirm whether this relationship could exist in the larger scale, and it will be exciting thing if the further data support this relationship in the global scale. From biogeochemical angle, it is enough to identify phytoplankton to phylum to connect with biogeochemical cycle and process. In this study, we also identify phytoplankton to the genus; however, they were not showed in this article. We want to try to find the different  $\delta^{13}\text{C}$  among the Chlorophyta, Bacillariophyta, and Cyanophyta.

Response to specific comments: (1) p833, line 23, Yes, “lentic” will be better and it will be revised. (2) p835, line 21, Yes, when using 64  $\mu\text{m}$  mesh net to collect phytoplankton, some species may be lost as they are smaller than the mesh size. So, we identified the phytoplankton species when we conducted the quantitative analysis of phytoplankton, and thus we could verify the results of qualitative analysis. (3) p837, line 6, Yes, Cyanophyta has no need to be italic and it will be revised. (4) p838, line 19, Yes, “phytoplankton” will be better and it will be revised. (5) We will think over and combine Fig. 4 to Table 2, and it will be revised.

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