

Interactive comment on “Densified multi-mission observations by developed optical water levels show marked increases in lake water storage and overflow floods on the Tibetan Plateau” by Xingdong Li et al.

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This is a valuable and interesting manuscript. The authors have exploited multisource remote sensing (i.e., multiple altimetric missions and Landsat archives) to create dense time series of lake water level and storage changes across 52 large lakes on the Tibetan Plateau. There are some previous studies focusing on changes in water level and storage on the Tibetan Plateau; however, these studies just got relatively lower temporal sampling and little altimetric information was used. It may limit the accuracy of trends in lake water level/storage in some cases and short-term monitoring of lake

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overflow flood. Therefore, I am firmly convinced that the densified water-level dataset derived by the authors can have tremendous practical value in studying water storage changes and regional hydrological processes on the Tibetan Plateau.

There are some questions or suggestions for your consideration. 1. As far as I am concerned, deriving altimetry water levels through multiple altimetry missions (including Jason-1/2/3, ENVISAT, ICESat-1, and CryoSat-2) is the key component. I think the manuscript needs a more detailed description of this methodology in section 3.1. 2. To validate the derived optical water levels, the authors used pressure type water level sensors to measure water pressure and converted them into water depths. How to convert the water depths into the actual water level and unify to the same reference datum with optical water levels? It should be clarified. 3. Pg.1, Line 14 "(>100km²)" should be "(>150km²)"? 4. The legend of figure 11 should be revised (add unit and scale). 5. Figure 16, miss unit in y axis

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