

Interactive comment on “Effects of Three Gorges Reservoir (TGR) water storage in June 2003 on Yangtze River sediment entering the estuary” by Z. X. Chu and S. K. Zhai

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The authors are grateful to three anonymous referees especially the one with 15-papes reviews for providing valuable suggestions and remarks during the stage of interactive comment on Hydrol. Earth Syst. Sci. Discuss., which undoubtedly contribute appreciably to the quality of this paper.

Based on the comments and requests, we have made changes on the original manuscript. Here are our responses to the interactive comments.

Anonymous Reviewer 1: I was surprised to find this paper is overlapped too much with two other papers published in Journal of Coastal Research (JCR,2006,

DOI:10.2112/05-0547R.1) and Acta Oceanologica Sinca (AOS, 2006, Vol. 25, No. 2, p71-19) . Most of data and figures presented in HESS paper have been published in AOS. The Three Gorges Dam project and its impacts are definitely one of the most intriguing scientific topics, thus it will be great if the authors can add some new data, such as the estuary and nearshore marine sediment records about the decreasing sediment load due to the building of TGD.

Response:

The paper in Journal of Coastal Research (JCR,2006, DOI:10.2112/05-0547R.1) examined temporal and spatial variations in water and sediment discharges of the Yangtze mainstream before and after the TGR impoundment with daily data (absent at Datong at that time) and annual data. The paper in Acta Oceanologica Sinca (AOS, 2006, Vol. 25, No. 2, p71-79) examined temporal variations in water and sediment discharges entering the sea on longer time scales with monthly and annual data. This paper submitted to HESS mainly with 2-months daily data placed an emphasis on temporal variations in water and sediment discharges of the Yangtze River entering the estuary during the TGR storage on a short time scale. The 2-months daily data before and after the TGR storage, collected after the publication of above two papers, are very valuable for exploring daily change in the Yangtze water and sediment discharges entering the estuary during the TGR storage, so it is necessary to tell the scientific world that results. Actually, this paper is a necessary supplementary to the above two papers and other papers related to the effects of TGR storage on the Yangtze River on a short or long time scale.

Since the nearshore sediment concentration has decreasing due to the decreased sediment supply in the past decades, together with resuspension from the bed, it is difficult to examine the decreasing trend of the nearshore sediment records before and after the TGR impoundment. Alternatively, the geomorphologic changes of the coastal wetland and delta coast after the TGR storage are added in the paper from Yang et al. (2005, 2006a).

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