

## *Supplementary material*

# **Quantifying the impacts of the Three Gorges Dam on the spatial-temporal water level dynamics in the Yangtze River estuary**

Huayang Cai<sup>1,2</sup>, Hao Yang<sup>1, 2</sup>, Pascal Matte<sup>3</sup>, Haidong Pan<sup>4</sup>, Zhan Hu<sup>5</sup>, Tongtiegang Zhao<sup>6</sup>, and Guangliang Liu<sup>7</sup>

<sup>1</sup>Institute of Estuarine and Coastal Research/State and Local Joint Engineering Laboratory of Estuarine Hydraulic Technology, School of Marine Engineering and Technology, Sun Yat-sen University, Guangzhou, 510275, China

<sup>2</sup>Guangdong Provincial Engineering Research Center of Coasts, Islands and Reefs/Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai), Zhuhai, 519082, China

<sup>3</sup>Meteorological Research Division, Environment and Climate Change Canada, Quebec, QC G1J 0C3, Canada

<sup>4</sup>First Institute of Oceanography, and Key Laboratory of Marine Science and Numerical Modeling, Ministry of Natural Resources, Qingdao, 266061, China

<sup>5</sup>School of Marine Sciences, Sun Yat-sen University, Zhuhai, 519082, China

<sup>6</sup>School of Civil Engineering, Sun Yat-sen University, Zhuhai, 519082, China

<sup>7</sup>Shandong Provincial Key Laboratory of Computer Networks, Qilu University of Technology (Shandong Academy of Sciences), Jinan, 250353, China

Correspondence: Guangliang Liu ([guangliangliu@163.com](mailto:guangliangliu@163.com))

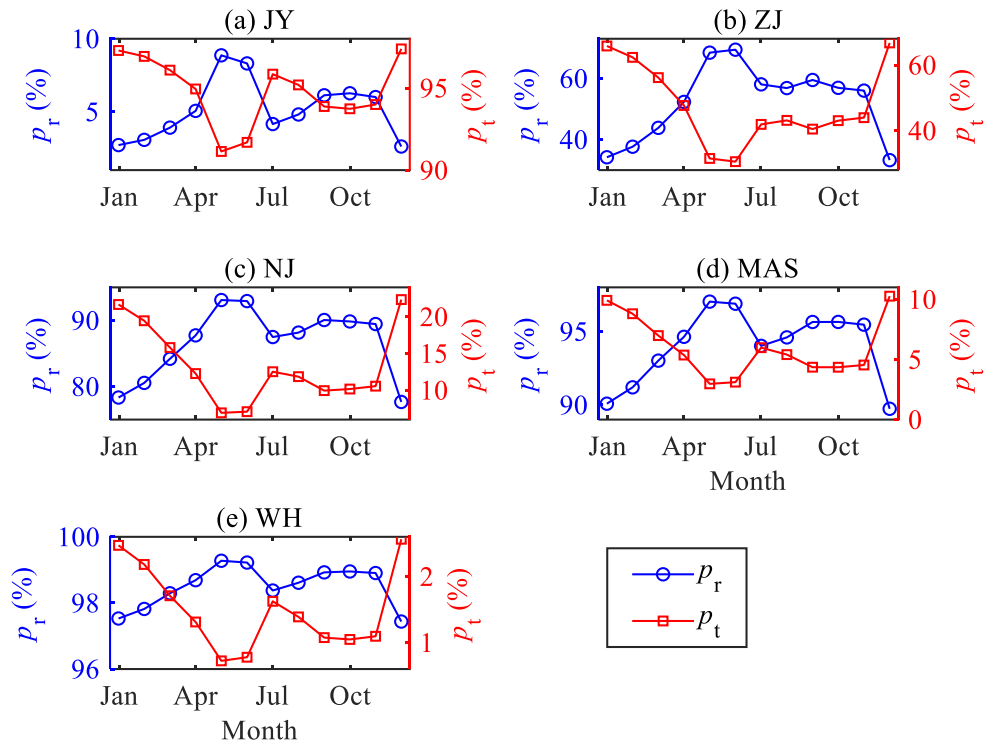


Figure S1. Variance contributions induced by the riverine  $\Delta p_r$  and tidal  $\Delta p_t$  forcing at different gauging stations along the Yangtze River estuary during the pre-TGD period.

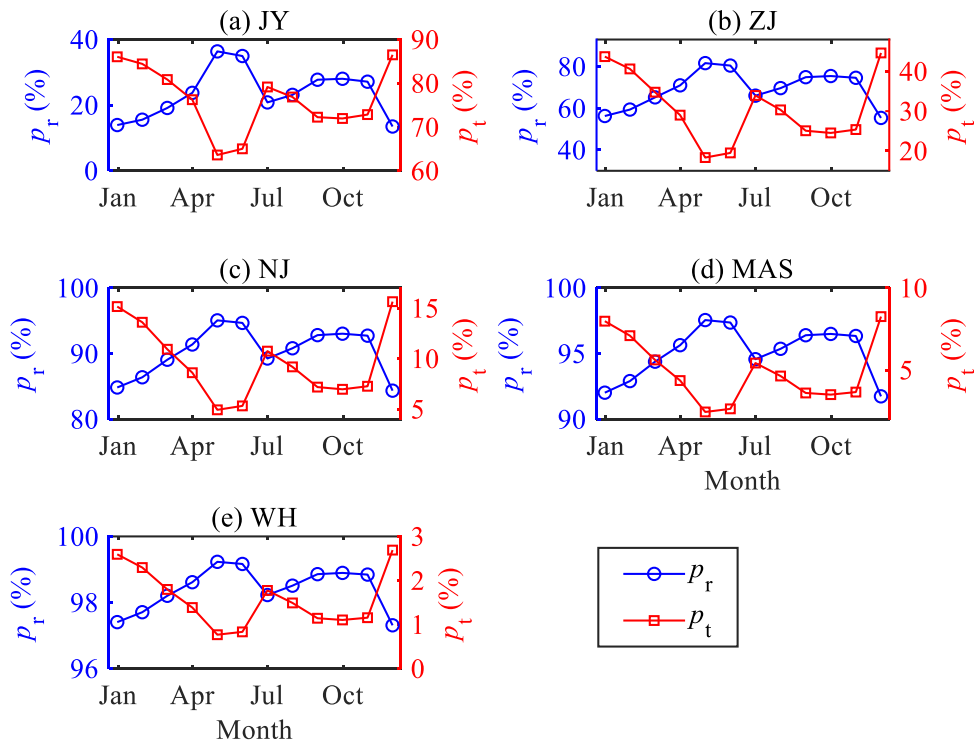


Figure S2. Variance contributions induced by the riverine  $\Delta p_r$  and tidal  $\Delta p_t$  forcing at different gauging stations along the Yangtze River estuary during the post-TGD period.