Hydrodynamic and geomorphological transformation of Yangtze estuarine delta under the impact of coastal engineering and climate-induced sea level rise

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Dynamics of ow, sediment and morphology of estuarine deltas worldwide have been profoundly altered by anthropogenic interventions and climate warming since the last century. e Yangzte estuarine delta (YED) is ideal to study such alterations and recent studies there have mostly focused on the impact of ree Gorges Dam. Our new studies and observations show that coastal engineering constructions and climate-induced sea level rise are transforming YED. For the past four decades, w observed local tidal datum rise of 15–43 cm in which climate warming-induced sea level rise accounted for 8 cm. During the same period, the tidal limit has migrated about 220 km upstream to Jiujiang, where it was located more than 2000 years ag during the Jin Dynasty. Since 2013, a unique shi of bed morphology from a muddy at bed to a dune bed made of coarse silt also appeared in the channels of estuarine turbidity maximum. ese results have global implications in formulating strategies
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