Abstract Details

Corresponding Author : Dr. Yongzhan ZHANG (yzhang@civil.eng.osaka-u.ac.jp)

Organization: The Key Lab of Coast & Island Development of Ministry of Education, Nanjing University, China & Coastal Engineering Group, Dept. of Civil Engineering, Osaka University, Japan

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Title: Study on Geophysical Survey for Optical Fiber Construction in the Riv Interactive Area-the Changjiang River Mouth as an Example

Abstract:

There are strong river flow and tidal current interactions in the Chan (Yangtze) River mouth area. The average annual run-off is 29.4�103 and average river water discharge is 925�109m3/a, with average sus sediment discharge (mainly fine sand and silt) of 486�106t/a. It is af by meso-tides, mostly irregular semidiurnal type, with the average hi level of 3.82m, and low tidal level of 1.86m. The river bed in the stud region, at a curve section where the river changes to flow southeastw instead of eastwards in the river mouth area, is more than 9km wide, separated into two distinctive geomorphologic parts. The northeastern occupied 1/3 of the river width, is the main deep river channel basica controlled by the river flow, with the water depth more than 20m, an deepest part more than 50m. The middle and southwestern parts are normally dominated by tidal processes, consist of sand and silty sand composed shoals/islands with tidal channels (generally less than 3m depth), the shoals are ordinarily exposed during the ebb tidal period. during the river flood period, the situation becomes more complex. S for the construction of optical fibers across the river, combined with th traditional surface and core sediment sampling, hydrographic monitor tidal level observation, the geophysical method has been applied to h the pre-feasibility studies in order to provide the basic data for the ro design. Side Scan Sonar and GeoPulse are used for the plane and ver profile survey, with the help of high accuracy GPS and Echo Sound Sc is proved to be a useful and reasonable way for the rapid survey in th mouth area, which is more complex comparing with the coastal beach cause of not only the active river-sea interactive dynamic processes b the changeable topography, even it still needs to be improved.

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Co-Authors