A Tendency of Sediment Transport in Hai Hau Coastal Area

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Abstract: The quantitative and qualitative assessments of sediment transport as well as coastal and estuarine morphodynamics have been carried out by a numerical model. The mathematical model consists of the 3D Reynolds-averaged Navier-Stokes equations, the ones for sediment transport and bed update, in which the operator splitting of the finite-difference equations combining a semi-Lagrangean treatment of the advective terms is used.

The model is applied to the Hai Hau coastal area covering approximately 50x30 km^2 located in the north Vietnam in the assumed case of very high suspended sediment concentration at Ba Lat estuary. The influences of wave and wind are also taken into account with several different options based on the real conditions.

The computed results show that the sediment transport strongly depend on the wave-wind regime. However the general tendency of sediment transport is directed towards the south and therefore the deposition in the south of Ba Lat estuary is more considerable than in the north. At the same time the further movement of sediment is possible in some measure in the condition of agreeable wind.

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