



Assessing Sediment Transport on Estuary-Sea Area Using a Two-Dimensional Coastal topography Evolution Model

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The amount of sediment yield due to erosion in the watershed causes morphological evolution in the estuary-sea area. Eroded sediments are carried by runoff and transported downstream the rivers, finally into coastal areas. Consequently, deposited sediments will alter the morphology of estuary-sea. Therefore, the quantity of sediment from the watershed should be evaluated reasonably to improve the precision of simulating topography evolution in the coastal areas. Therefore, the hydrograph of flow discharge and suspended sediment concentration and sediment yield need to be estimated and then be used as the boundary conditions for the Two-Dimensional Topography Evolution model to simulate sediment transport and topography evolution in the estuary-sea area. The Two-Dimensional Topography Evolutions Model linked to soil erosion and sediment yield from river basin was developed in the study, Kaoping River is used as an illustrative example. The Two-Dimensional Topography Evolutions Model linked to soil erosion and sediment yield from river basin was applied to simulate sediment transport and topography evolution in the coastal area during the period of typhoon Morakot. The results indicate that the diffusion direction of suspended load mainly along the mainstream of the direction of Kaoping river spread to the southwest of the sea. The simulation for distribution of sediment transport in the coastal area agree with FORMOSAT-2 satellite image that was taken after typhoon Morakot. Therefore, the Two-Dimensional Topography Evolutions Model can be reasonably simulated sediment transport in estuary-sea area.