

عنوان مقاله:

On CFD Modeling of Sediment Transport in Rivers

محل انتشار:

ششمین کنفرانس بین المللی مهندسی عمران (سال: 1382)

تعداد صفحات اصل مقاله: 8

نویسندگان:

,Goodarz Ahmadi - *Department of Mechanical and Aeronautical Engineering, Clarkson University, Potsdam*

,Mehrzad Shams - *Department of Mechanical Engineering, Iran University of Science and Technology*

خلاصه مقاله:

A computational modeling analysis of the flow and sediment transport, and deposition in meandering river models was performed. The river flow characteristics, including the mean velocity field and the Reynolds stress components are evaluated. The simulation results were compared with the available experimental data of the river model and discussed. The Lagrangian tracking of individual particles was performed, and the transport and deposition of particles of various sizes in the meandering river were analyzed. Particular attention was given to the sedimentation patterns of different size particles in the river-bend model. The flow patterns in a physical river were also studied. A Froude number based scale ratio of 1:100 was used, and the flow patterns in the physical and river models are compared. The result shows that the mean-flow quantities exhibit dynamic similarity, but the turbulence parameters of the physical river are different from the model. More strikingly, the particle sedimentation features in the physical and river models do not obey the expected similarity scaling.

کلمات کلیدی:

River Flow, Sediment Transport, Particle Tracking, Computer Model

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