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Particle size distribution of bed materials in the sandy river bed of alluvial rivers

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Abstract:

The particle size distribution of bed materials in the sandy river bed of alluvial rivers is important in the study of topics such as friction, river bed evolution, erosion, and siltation. It also can reflect the dependency relation between river bed sediment and flow intensity. In this paper, the critical pattern of sediment movement in the near-wall region of a sandy river bed was analyzed. According to the principle of momentum balance, the critical settling-rising condition of bed material in a sandy river bed was found to be instantaneous turbulent velocity equal to 2.7 times the sediment settling velocity in quiescent water. Based on a vertical instantaneous

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