Mountain River Resistance Research

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Abstract

Flow resistance is a lumped parameter to close 1-D momentum equation, which is related to bed surface characteristics and flow conditions, having a profound effect on flow and sediment transport. Resistance relations of alluvial rivers have been fruitfully studied and the modifications have been inherited to apply to Mountain Rivers despite significant difference existing in the mechanisms of flow resistance. But due to the complex dynamics of shallow water flow relative to large roughness, mountain river resistance relations developed from specific areas cannot apply generally. We summarize the previous work about mountain river resistance and analyze the physical essence of resistance in mountain rivers. Based on these studies, we do some research and validate the results by field observation in Chengdu, China.