



Effect of Three Gorges Reservoir backwater on bed load transport discharge of Chongqing reach by backwater of Three Gorges Reservoir in upper Yangtze River

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ABSTRACT

Since Three Gorges Reservoir runs at 175m as normal level in 2008, the Chongqing reach have been the changeable back water zone. Then the bed load transportation near Chongqing reach is a hot point of researchers because of the influence on the inland navigation security and river bed evolution while Chongqing is the important inland navigation center of upper Yangtze river. We collected field measured bed load transport data of Cuntan hydrological station from 1964 to 2012 with flow discharge and water level data at same time. The data was analyzed according to stream power methods with the parameters including energy slope, average water depth and gravel diameter. Then the result shows that the most decrease period of stream power is about from September to October while it the most important period to erosion the gravels silt in flood. And the largest stream power period except flood during summer is about on March to April. This can explain the gravel deposition usually happens near the gravel reach edge on March to April which tends to threaten the security of navigation.