

Water and sediment discharge from four small mountainous rivers in Zhejiang province: The roles of basin area, rainfall and human activities

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As a separate area whose water system flowing into sea, Zhejiang Province discharging water and sediment into sea is mainly through mountainous rivers and has different characteristics from other parts of China. Variations of water and sediment discharge from 4 small mountainous rivers were examined and compared from 1957 to 2008 at the monthly and yearly scales. The results showed that the 4 mountainous rivers presented a similar variability. High/low sediment discharge was always coupled with high/low water discharge in both scales of monthly and yearly. And high water and sediment discharge occurred in the flood season. Rainy season and typhoon season were the main period of flood in Zhejiang Province, with a mean water discharge of 75.4% and sediment discharge of 92.2% into sea. The more sediment discharge than water is caused by the high-increasing sediment yield during the huge flood. The total water and sediment discharges of the 4 individual rivers depend on the areas of the 4 river basins, while the variation trends of the water/sediment discharge are controlled by the rainfall. The human activity, principally the construction of reservoirs, significant increased the water discharge in the dry season and decreased it in the flood season, and decreased the total sediment discharge in addition.

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