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Long-Term Water and Sediment Change Detection and Anthropogenic Impacts Analysis in a Small Mountainous Tributary of the Lower Pearl River, China

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Hydrological regimes of most Chinese rivers have been changing both qualitatively and quantitatively due to the profound human disturbances, such as river diversions, damming and land use change. In this study, a mountainous tributary (the Luodingjiang River) of the lower Pearl River, China, was investigated to illustrate the impacts from human activities on river systems during the period of 1959-2002. Monotonic trend and step change of the hydrological data of the Luodingjiang River were tested using Mann-kendall test and Pettitt test. The detected changes both in water and sediment point to the impacts of reservoir constructions as well as other activities such as water diversion programs, road construction and land use change.