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# A Study on the Flow Energy Dissipation in Step-Pool of Mountain Rivers

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Abstract
In recent years, the influences of increasing equatorial temperature and abnormal weather patterns have caused very heavy rains, with precipitation almost equal to the annual rainfall in Taiwan. Due to the amount of rain flowing into river channels, river beds and cross-strait erosion are aggravated, which trigger avalanches of debris resulting in debris flows and severe disasters. Step-pools have the ability to dissipate energy and stabilize river beds. Their structure magnifies the resistance of river flows, thus, consuming the energy of the river flow and resulting in river beds being protected from erosion. Even though step–pool terrains are occasionally found in mountainous rivers of Taiwan, in this study, the ability of step-pool terrains to decrease flow strength could be understood through on-site measurements and simulation of step pool terrains.
Statistical results of step-pool of three mountain rivers showed that during the 10 years of return period, step-pool with a height difference of 0.5 meter has the capacity of about 24.15 % flow energy dissipation, that with a height difference of 1 meter has the capacity of about 58.43% flow energy dissipation, and that with a height difference of 1.5 meter has the capacity of about 78.49% energy dissipation. The step-pool terrain affects the capacity of river course to dissipation energy; as the height difference of the step-pool increases, the change of the energy dissipation rate is greater.
Key works[U+FF1A]Step-pool[U+3001]Energy dissipation [U+3001]Mountain river