



Preliminary study on thirty dammed lakes in range area of Taiwan

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Thirty seven dammed lakes in range area of Taiwan were investigated, seven factors, including catchment area, stream width, landslide area, mean slope of landslide, lake volume, dam height, and dam volume are studied in the paper. There is 43.6% of dammed lake was relating to earthquake, 35.9% of dammed lake was triggered by rainfall, and the lake induced by others or unknown reason was about 20.5%.

As the result shown, the factors, dam height and lake volume, relating to earthquake are large than factors of one relating to rainfall. The dam volume induced by earthquake spreads widely range from 5,000 m³ to 1,280,000m³, the dam volume induced by rainfall distributes from 30,000 m³ to 200,000m³. It is about 18 to 56 degree for mean slope of landslide for the dammed lake triggered by earthquake, and about 21 to 45 degree for the one triggered by rainfall.

According to factors analysis, it appeared an approximate positive correlation for the lake volume and dam volume; the dam height is proportioned to mean slope of landslide, the steeper slope of landslide, the higher height of dam is. More, dam height is positively correlating to landslide area, mean slope of landslide, and stream width. Last, an approximate relation of the dam volume and lake volume is obtained and shows that it is reasonable concluding form the comparison with two dammed lake cases in Japan and USA.