



## **Evaluation on the rainfall threshold of large-scale landslide - a case study in Southern Taiwan**

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Taiwan is located in the Pacific volcanic seismic zone and frequently suffers from landslides and debris flow caused by typhoons. In recent years, typhoons frequently brought extreme rainfall and caused large-scale landslide in hillside fields. The disaster seriously hit the regional economic development and national infrastructures. In this study, we collected the rainfall intensity, rainfall duration and rainfall amount of a total of 323 landslide events from 2008 to 2017 in southern Taiwan. The critical line of the rainfall intensity and rainfall duration is  $y = 43X - 0.544$ , and the critical line of the accumulated rainfall and rainfall duration is  $y = 31.623X - 0.5$ . Eleven of the 323 landslide events belong to large-scale landslide events. The critical line of the large-scale landslides between rainfall intensity and the rainfall duration is  $y = 75X - 0.326$ , and the critical line of the large-scale landslides between the accumulated rainfall and the rainfall duration is  $y = 80X - 0.6505$ . Finally, we set the alarm value for the large-scale landslide to establish an early warning system.