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Prevention of Debris Flow from Inactive, Usually Dry Catchment in zero-order basin

Toshiyuki Horiguchi, Hiroshi Kokuryo, and Nobutaka Ishikawa

National Defense Academy, Civil Engineering, Yokosuka, Japan (debrissegregation@gmail.com)

The human settlement tend to be close to a mountainous area all over the world. The prevention concept is necessary to mitigate or prevent the origin occurrence of debris flow in zero-order basin. The zero-order basin is a mountain stream that is unclear valley topography, and don't flow always running water. Although it is designated as a debris flow prone zone, the area of the basin is small, and the arrangement of sabo dam is difficult, and there are a lot of mountain streams which are judged that the facility function is hard to be fully demonstrated for the actual phenomenon of the sediment. The prevention and/or mitigation of measurement facilities is required. This study presents a full design of a protection barrier against debris flow, including woody debris in small, inactive, and usually dry catchments in small-scale torrents or zero order basin. The concept of performance-based design is proposed for a protection barrier as exemplifying slit barrier in small torrent. In addition, the safety performance for two types of a slit barrier is verified to protect debris flow under the situation of three difference small torrents.