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## Behaviour of Slope Protecting and Retaining Structures during Wenchuan Earthquake on May 12 2008

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### Introduction

At 14:28, May 12th 2008, a strong earthquake measured Ms8.0 hit Longmenshan mountain area, west Sichuan province, China. The quake is induced by the thrust of Longmenshan central fault, results in around 50000 rock avalanches and landslides [1], destroys numerous villages and towns, and causes nearly 90000 fatalities or missing.

After the quake, the authors made around 3 months' field reconnaissance to the quake-hit area. In this paper, we mainly address the behaviors of the commonly used slope protecting or retaining structures. Protecting structures refer to gravity retaining wall, protecting net and shotcrete, which won't add too much force to reinforce a slope, but can protect the slope from further erosion, weathering or local collapse. While retaining structures refer to slide-resistant pile, anchored concrete frame and cable bolts, whose basic function is to hold up a slope from deformation or slide through the interaction of structures and slope materials.

Geographical names cited in the paper are illustrated in Fig.1 with epicenter and intensity contour given. Most of the cases are located in the area of Zipingpu reservoir, where the national highway G213 and Dujiangyan-yingxiu expressway pass and the earthquake intensity is IX~XI. Other cases are in Beichuan county, Gucheng and Pubugou hydropower projects.

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