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Preliminary Study on Landslides Triggered by the April 20, 2013 Lushan, Mw 6.6 Earthquake of China

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In this paper, basic information of the April 20, 2013 Lushan earthquake, historical earthquakes in the Lushan earthquake struck area and associated historical earthquake-triggered landslides were introduced firstly. We delineated the probable spatial distribution boundary of landslides triggered by the Lushan earthquake based on correlations between the 2008 Wenchuan earthquake-triggered landslides and associated peak ground acceleration (PGA). According to earthquake-triggered landslides classification principles, landslides triggered by the 2013 Lushan earthquake were divided into three main categories: disrupted landslides, coherent landslides, and flow landslides. The first main category includes five types: rock falls, disrupted rock slides, rock avalanches, soil falls, and disrupted soil slides. The second main category includes two types of soil slumps and slow earth flows. Flow landslides is mainly rapid flow slides. Three disrupted landslides, including rock falls, disrupted rock slides, and soil falls are the most common types related to the earthquake. Finally, the effect of aftershocks on the landslides, comparisons of landslides triggered by the Lushan earthquake with landslides triggered by other earthquake events, and revelations for subsequent landslides detailed interpretation based on high-resolution remote sensing images were discussed respectively. In conclusions, based on quick field investigations for the Lushan earthquake, classifications, morphology of source area, motion and accumulation area of many earthquake-triggered landslides were recorded before the landslide might be reconstructed by human factor, aftershocks, and rainfall etc. It has important significance to earthquake-triggered landslide hazard mitigation in earthquake struck area and subsequently landslides scientific research related to the Lushan earthquake.

Key words: the Lushan earthquake; landslides; “April 20”; Mw 6.6 earthquake; emergency field investigations

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