

GP5

Risk analysis of geohazards caused by “8.03” Ludian Earthquake in Yunnan Province, China

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Abstract (500 words max):

Ludian Earthquake (Ms6.5) on August 3, 2014 has induced many secondary geo-hazards, and resulted in more than 600 deaths and significant property losses. More than 166 landslides and 66 rockfalls have been interpreted by field investigation and remote sensing. These geo-hazards mainly distributed along the Niulanjiang valley between 1000 and 1500m a.s.l. The geo-hazard area has an abrupt increase where the PGA is large than 500 cm/s^2 . Furthermore, it was found that there was an earthquake surface rupture zone with four large-scale landslides and a high-risk quake-lake around it in the IX-degree seismic intensity area. The zone is characterized by typical right-lateral strike-slip, which means that it caused by the activity of a right-lateral strike-slip fault, an extension of Baogunao-Xiaohe Fault along the direction from Xiaohe to Lehong towns (NW-SE). The fault, which controlled the distribution of the geo-hazards induced by the earthquake, played a vital role in the formation of four large-scale landslides. Based on analysis of the fault location features and the distribution of the four large-size landslides, it was convinced that the fault was also seismogenic fault of the earthquake and characterized by right-lateral strike-slip. The future risk of the geo-hazards is assessed by spatial analysis the relationship between the geo-hazard inventory and physiographic settings in the quake-influenced region.