Slope surface processes caused by earthquakes

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In recent years, earthquake-caused slope surface processes received much attention, especially after the 2008 Wenchuan (China) Mw7.9 earthquake. Slope surface process is a broad concept including various types such as general landslides, rockfalls, topples, rock avalanches, and debris flows. All types of slope surface process can be collectively referred to as LANDSLIDES. This study focuses on correlations between slope surface processes and shallow earthquakes, including establishing the relationships between earthquake-triggered slope surface processes and earthquake magnitudes, seismogenic faults, and earthquake ruptures. Then employing these relationships to solve problems of earthquake geology such as seismology (seismic parameters, ground shaking, and seismic intensity), seismogenic faults (geometry, kinematics, and rupture processes), and geology (geomorphologic evolution). Overall, this study attempts to connect slope surface processes to earthquakes and fault activities, which have important significance for understanding the mechanism of earthquake-triggered landslides, geological processes in the shallow crust and prevention and mitigation of seismological and geological hazards.