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## Surface Rupture and Hazard of Wenchuan Ms 8.0 Earthquake, Sichuan, China

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### ABSTRACT

Longmen Shan is located the special joint between the Qinghai-Tibetan Plateau in the west and the Yangtze craton in the east. Consisting of a series of parallel imbricated thrust, it develops, from the west to the east, the Maoxian-Wenchuan, Yingxiu-Beichuan and Pengxian-Guanxian faults. Wenchuan Ms 8.0 earthquake is a thrust with strike-slip type, and surface ruptures are located in Yingxiu-Beichuan fault zone and Peng-xian-Guanxian fault zone. Based on the geological background, tectonic setting, the active tectonics of Longmen Shan and surface ruptures of the Wenchuan earthquake, a dynamical model to illustrate possible links between surface processes and upward extrusion of lower crustal flow channel at the eastern margin of the Tibetan plateau have been studied, and the results is the material in lower crust in the Longmen Shan moving as nearly-vertical extrusion and uplift, resulting in the surface rate of tectonic movement differing according to depth rate as well as the occurrence of large shallow Wenchuan earthquake.

### KEYWORDS

Wenchuan Earthquake, Longmen Shan, Surface Rupture, Hazard, Sichuan, China

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