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Rapid slip of the Gyaring Co fault in Central Tibet

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The Gyaring Co fault (GCF) is one of a series of active en echelon faults of the Karakoram-Jiali fault zone (KJFZ) in the Central Tibetan Plateau. It has been reported as a dextral fault, striking N50°-60°W at a rate of ca. 10 to 20 mm/yr (Armijo et al. 1989). Another en echelon fault, Beng Co fault (BCF), was located on the 1951 M8 event also implies the possibility of earthquake hazard at GCF. By interpreting high resolution satellite imageries, we are able to remap $\sim$140 fault traces along the GCF. Combining optically stimulated luminescence (OSL) ages with the offset obtained from satellite imagery analysis and field survey, the slip rate along the GCF can be estimated as 12-17 mm/yr since ca. 80 ka. This study also focuses on a section of the western segment of the GCF, where the slip has been recognized to have occurred at 3.0 $\pm$ 1.6 m more than 7 times. This $\sim$3 m slip implies MW 7.2-7.4 earthquakes recurring to the western segment in every 200 yrs, while reaching about MW 7.7 if both segments could break at the same time.