



Present-day Movement Characteristics of Main Faults Around the Eastern Himalayan Syntaxis Inferred from GPS Observations

Fangtou Tang and Jian Song

National Earthquake Infrastructure Service, No.63 Fuxing Avenue, Beijing, China(fftang@neis.gov.cn)

Based on GPS measurements, the present-day movement characteristics of five main faults around the Eastern Himalayan Syntaxis was studied. The result shown that the movement characteristics of the faults are quite different in different tectonic areas. The Brahmaputra fault zone is of the same movement features in the west of the Eastern Himalayan Syntaxis, that is, right-lateral strike-slip together with extrusion, and both the strike-slip and extrusion rate are about 5mm/a. At the west of the Syntaxis, the Jiali fault zone in the section from Lasa to Naqu is right-lateral strike-slip, together with extrusion, and the strike-slip and extrusion rates are $\sim 5\text{mm/a}$ and $\sim 3\text{mm/a}$, respectively. While the Jiali fault zone in the section from Gongbujiangda to Dingqing is of a weak right-lateral strike-slip rate of only about 2.5mm/a, and near the syntaxis, the slip rate is even lower than 1mm/a. However, at the east-south of the syntaxis, the Jiali fault zone in the section from Sama to Chayu changes its movement style into left-lateral strike-slip with extrusion, and both the strike-slip and extrusion rates are about 5mm/a. At all the area around the syntaxis, the Nujiang River fault zone is of weak activity, with a movement rate less than 1mm/a. At the west of the syntaxis, the Lancang River fault zone is of weak activity, with a movement rate lower than 1mm/a. Near the syntaxis and at the east-south of the syntaxis, all the Lancang River fault zone is of right-lateral strike-slip movement, with a rate larger than 3.0mm/a. At the west of the syntaxis and near the syntaxis, the Jinsha River fault zone is right-lateral strike-slip with extrusion, and both the strike-slip and extrusion rates are about 3mm/a, but at the east and east-south of the syntaxis, the fault zone only presents strike-slip movement, without significant extrusion, and the strike-slip rate is about both 3.0mm/a. Our results revealed that although the Eastern Himalayan Syntaxis Eastern was formed in the Mesozoic, the present-day movement of the main faults around the syntaxis is still controlled by it.