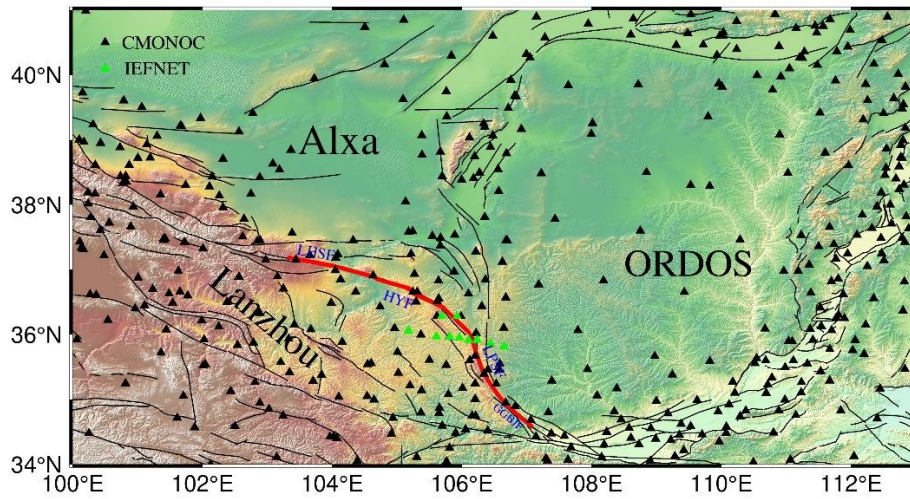
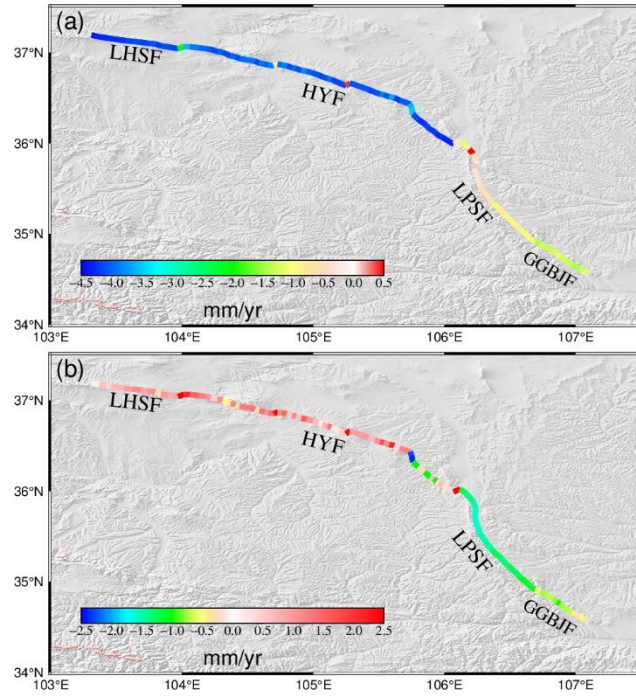


**Figure S1.** The historical earthquake distribution on northeastern margin of the Tibetan Plateau. The data is from National Earthquake Data Center of China (<https://data.earthquake.cn/>)



**Figure S2.** The distribution of GPS stations



**Figure S3.** Distribution of fault slip rates when setting up dense nodes along the fault strike direction. (a) is the strike-slip component; the positive value represents the right-lateral strike-slip and the negative value represents the left-lateral strike-slip; (b) is the dip-slip component; the positive value represents extension and the negative value represents contraction.