

## Slip-rate of intramontane active strike-slip fault inferred from offsets and upstream lengths of deflected stream channels

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In order to evaluate the activity of intramontane active faults, we focused on the relationship between offset amount (D) of stream channels and upstream length (L) of deflected channels along main active faults in SW Japan. We measured and plotted D-L data on linear graph for clarifying the fitting degree of linear correlation between D and L. The result shows that there is a good linear correlation ( $D=aL$ ) in the intramontane active strike-slip faults. There is also a linear correlation between a-values and strike-slip rates (s) in intramontane regions ( $s=10a$ ). These results suggest that a-value may be used as a quantitative index to evaluate the activity of active strike-slip faults in intramontane region.

Stream channels, terrace risers, shorelines, and glacial moraines are good geomorphic markers that record offsets of active strike-slip faults. In intramontane region, it is, however, difficult to evaluate quantitatively fault activity (e.g., slip rate) because well-dated geomorphic markers are less developed. In order to evaluate the activity of strike-slip fault in the intramontane region, we have focused on the relationship between amount (D) of offset stream channel and upstream length (L) from deflected point to valley-head using several examples from southwest Japan. There are some studies in the recent decades on the relationship between D and L, which show an increasing tendency of D with L in log-log scale, little examination has been made on the reliability for quantitative evaluation of fault activity. In this study, we measured and plotted D-L data on linear graph for clarifying the fitting degree of linear correlation between D and L. The analytical result shows that there is a good correlation shown as  $D=aL$  (a: certain coefficient) in the intramontane active strike-slip faults, but non-linear in those of range-front and near-drainage divide regions. The non-linear correlation may be due to cessation or decay of headward erosion in the near-drainage divide regions and abandonment or capture of stream channels in the range-front region. There is also a linear correlation between a-values and average rates (s) of strike-slip faults in intramontane regions which is shown as  $s=10a$ . These results suggest that certain coefficient a ( $a=D/L$ ) may be used as a quantitative index for evaluating the activity of the intramontane active strike-slip faults.