

# GPS-Constrained Estimate of Present-Day Slip Rate Along Major Faults of Turkey

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**Key words:** Deformation measurement; GNSS/GPS; Reference frames

## SUMMARY

Turkish Active Fault Map published in 1992 by General Directorate of Mineral Research and Exploration provided a template for various research studies. However, a comprehensive revision study was initiated in view of the developments in earth sciences in the last 20 years and it was completed and published in 2012 and 2013 successively. The revised active fault map involves twice as many active faults as the previous active fault map. The revised fault map shows that there are 500 active faults in Turkey. In order to understand the earthquake potential of these faults, it is needed to determine the slip rates. Although many regional and local studies were performed in the past, the slip rates of the active faults in covering whole Turkey have not been determined. In this study, the block modeling, which is the most common method to produce slip rates, is used. GPS velocities required for block modeling is being compiled from the published studies and the raw data provided, then velocity field is combined. To form a homogeneous velocity field, different stochastic models are used and the optimal velocity field is achieved.

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