

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

**Haluk Ozener, Bahadir Aktug, Asli Dogru, Levent Tasci and Mustafa Acar (Turkey)**

**Key words:** GNSS/GPS; Positioning; crustal deformation; fault slip rates; active faults

## **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 about 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 Turkey have not been determined.

In this study, the block modelling, which is the most common method to produce slip rates, will be done. 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 will be used and the optimal velocity field will be achieved. In literature, GPS site velocities, which are computed for different purposes and published, are combined globally and this combined velocity field are used in the analysis of strain accumulation. It is also aimed to develop optimal stochastic models to combine the velocity data.

Real time, survey mode and published GPS observations is being combined in this study. We also perform new GPS observations. Furthermore, micro blocks and main fault zones from Active Fault Map Turkey will be determined and homogeneous velocity field will be used to infer slip rates of these active

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faults.

Here, we present the result of first two years of the study.

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