

## Geodetic measurements of crustal deformation across the southern Arava Valley section of the Dead Sea Fault and implications to seismic hazard assessment

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Geodetic and seismic investigation of crustal deformation along the southern Arava Valley section of the Dead Sea Fault is presented. Using dense GPS measurements we obtain the velocities of new near- and far-field stations across the fault. We find that this section is locked with a locking depth of  $19.9 \pm 7.7$  km and a slip rate of  $5.0 \pm 0.8$  mm/yr. The geodetically determined locking depth is found to be highly consistent with the thickness of the seismogenic zone in this region. Extrapolation of instrumental seismic record suggest that only  $\sim 1\%$  of the total seismic moment was released by small to moderate earthquakes since the last large event on 1212 AD. Historical and paleo-seismic catalogs of this region together with instrumental seismic data and calculations of Coulomb stress changes induced by the 1995 Mw 7.2 Nuweiba earthquake suggest that the southern Arava Valley section of the Dead Sea Fault is in the late stage of the current interseismic period.