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**New Crustal Thickness for Djibouti, Afar, Using Seismic Techniques** MULUGETA DUGDA, SOLOMON BILILIGN, North Carolina A&T State University — Crustal thickness and Poisson's ratio for the seismic station ATD in Djibouti, Afar, has been investigated using two seismic techniques ( $H-\kappa$  stacking of receiver functions and a joint inversion of receiver functions and surface wave group velocities). Both techniques give consistent results of crustal thickness  $23\pm 1.5$  km and Poisson's ratio  $0.31\pm 0.02$ . We also determined a mean P-wave velocity ( $V_p$ ) of  $\sim 6.2$  km/s but  $\sim 6.9-7.0$  km/s below a 2 - 5 km thick low velocity layer at the surface. Previous studies of crustal structure for Djibouti reported that the crust is 6 to 11 km thick while our study shows that the crust beneath Djibouti is between 20 and 25 km. This study argues that the crustal thickness values reported for Djibouti for the last 3 decades were not consistent with the reports for the other neighboring region in central and eastern Afar. Our results for ATD in Djibouti, however, are consistent with the reports of crustal thickness in many other parts of central and eastern Afar. We attribute this difference to how the Moho (the crust-mantle discontinuity) is defined (an increase of  $V_p$  to 7.4 km/s in this study vs. 6.9 km/s in previous studies).

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