

Density and magnetic intensity of the crust and uppermost mantle across the northern margin of the Tibetan Plateau

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Recently, we have processed the gravitational and geomagnetic data from a geophysical survey along a profile (Baicheng to Da Qaidam) which crosses the northern and eastern Tarim Basin, the Altyn Tagh Mountains, and the Qaidam Basin, respectively. Based on the P- and S-wave velocities (Zhao et al., 2006), both the density and magnetic intensity of the crust and uppermost mantle were determined by using a joint inversion of gravity versus geomagnetism. Our new results at the northern margin of the Tibetan Plateau reflect different crustal structures beneath Tarim basin and Qaidam basin, and these two basins may be produced by different terranes. In addition, strong deformation has occurred in the basement and interior of the Qaidam Basin during the tectonic evolution.

Keywords: Density, Geomagnetic intensity, Tibetan Plateau, Tarim Basin, Altyn Mountains, Qaidam Basin