

1D Velocity Model for the Gobi-Altai Region from Local Earthquakes

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Abstract : We performed an inversion method to determine the 1D-velocity model with station corrections of the Gobi-Altai area in the southern part of Mongolia using earthquake data collected in the National Data Center during the last 10 years. In this study, the concept of the new 1D model has been employed to minimize the average RMS of a set of well-located earthquakes, recorded at permanent (between 2006 and 2016) and temporary seismic stations (between 2014 and 2016), compute solutions for the coupled hypocenter and 1D velocity model. We selected 4800 events with RMS less than 0.5 seconds and with a maximum GAP of 170 degrees and determined velocity structures. Also, we relocated all possible events located in the Gobi-Altai area using the new 1D velocity model and achieved constrained hypocentral determinations for events within this area. We concluded that the estimated new 1D velocity model is a relatively low range compared to the previous velocity model in a significant improvement intend to, and the quality of the information basis for future research center locations to determine the earthquake epicenter area with this new transmission model.

Keywords : 1D velocity model, earthquake, relocation, Velest

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