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## Regional full seismic waveform inversion of crustal velocity structure in Qaidam Basin

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Under the northward push of the Tibetan Plateau, Qaidam basin is the intersection of Traim block, Bayan Har block and Qilian orogen. Inversion and interpretation of the crustal structure under Qaidam basin are helpful to understand the evolution of the plateau. On November 10, 2008, an Mw6.3 earthquake occurred in the northern margin of Qaidam basin and was recorded by 17 broadband temporary stations installed by the INDEPTH IV Project. We performed inversion of the recorded regional seismic waveforms combining niche genetic algorithm and reflectivity method and obtained the crustal velocity structure of the eastern, western and northwestern part of Qaidam basin. The inversion results show that the structures of the eastern and western basin are similar, where both exist a very thin low velocity layer at about 26km in the middle crust. The thicker lower crust of the west basin results in thicker crust than that of the east basin, which reveals decoupling of the upper and lower crust of the basin. The structure of the northwestern basin is quite different from other regions with much thicker crust, lower velocity of the lower crust and upper mantle, indicating strong deformation and partial melting.