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Crustal structure beneath the eastern Kunlun and the western Qingling, the Central Orogenic Belt in China continent

Zhongjie Zhang and Zhiming Bai

State Key Laboratory of Lithospheric Evolution, Institute of Geology and Geophysics, Chinese Academy of Sciences, 100029, Beijing, PRC

The central orogenic belt (or Qingling-Qilian-Kunlun) in China continent with length of about 4000km as one of world's great collision orogenic belts extends from the Pamirs-West Kunlun Qilian, Kunlun, Qinling, Dabie, and finally to the Korean Peninsula. The belt, considered as the important boundary between the south and the north China, are treated as one key belt of studying Paleo-Tethyan Ocean finally suturing with China continent. The contact relationship between the Kunlun and the west Qingling is the key for the understanding of the extension of the central mountain ranges in China continent. In 2003, one wide-angle seismic profile was acquired in the contact geographic region of the eastern Kunlun and the western end of Qingling orogeneic belt. Here, we present the interpretation of wide-angle seismic profile between Qinggenhe and Lanmusi in Qinghai, the tectonic contact zone between the Kunlun block and the west Qingling. Combining the previous seismic interpretation of crustal structure in other segments, we construct a 3400 km long cross section along the central orogenic belt. The crustal velocity cross-section demonstrates abruptly variation of crustal thickness along the belt, and provides crustal constrains to understand the collision between the southern and the northern China.