GEOMETRY OF OCEANIC SLAB BENEATH THE WESTERN MAKRAN SUBDUCTION ZONE

Hamidreza MOMENI
M.Sc., Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
hamidrezamomeni@iasbs.ac.ir

Khalil MOTAGHI
Assistant Professor, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
kmotaghi@iasbs.ac.ir

Mohsen RAHMANI
Ph.D., Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
mrahmani@iasbs.ac.ir

AbdolReza GHODS
Associate Professor, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
aghods@iasbs.ac.ir

Farhad SOBOUTI
Associate Professor, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran
farhads@iasbs.ac.ir

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We present a seismic velocity image for the Makran upper mantle (SE Iran) across a profile (AA', in Figure 1) extending from Chabahar to the north of Taftan volcanic mountain. The image was generated by a teleseismic travel time tomography called the ACH method (Aki et al., 1977). The teleseismic data were gathered by 28 broadband stations governed by the IASBS, Zanjan, as well as two and three permanent stations belonging to the IIEES and the IRSC
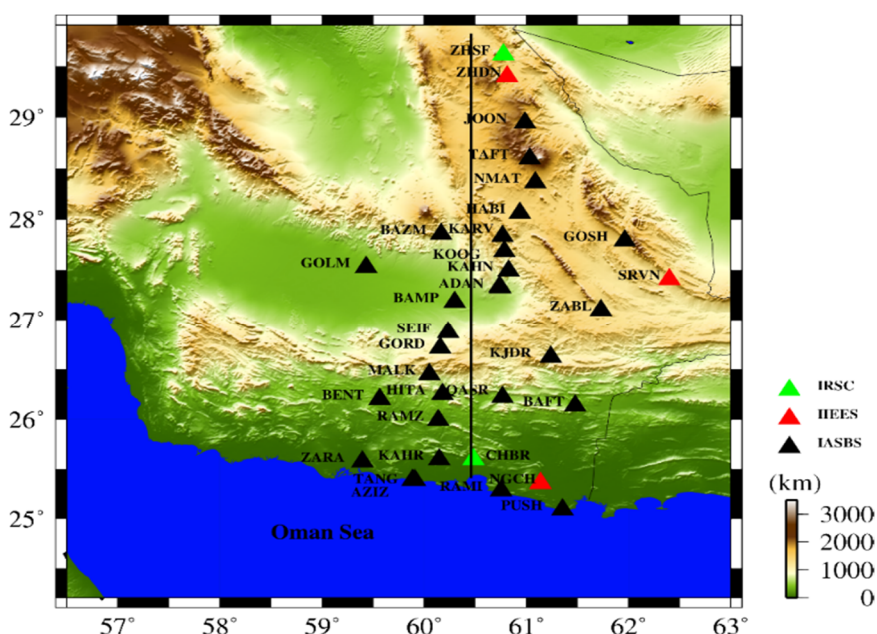

Figure 1. Distribution of the 33 seismic stations used in this study. The scale for topography (in kilometer) is shown down the right side of the picture.

permanent networks, respectively (Figure 1). The analyzed data span is 23 months, from Jun 2016 to May 2018. 491 teleseismic events with magnitude greater than 5.1 and the epicentral distance between 20° and 90° were picked using the adaptive stacking method of Rawlinson and Kennett (2004). 4256 picked travel times were then inverted by the ACH method revealing existence of a high velocity anomaly dipping northward down beneath the array. We interpret it as a seismic signature of the Oman oceanic lithosphere subducting beneath Central Iran (Figure 2).
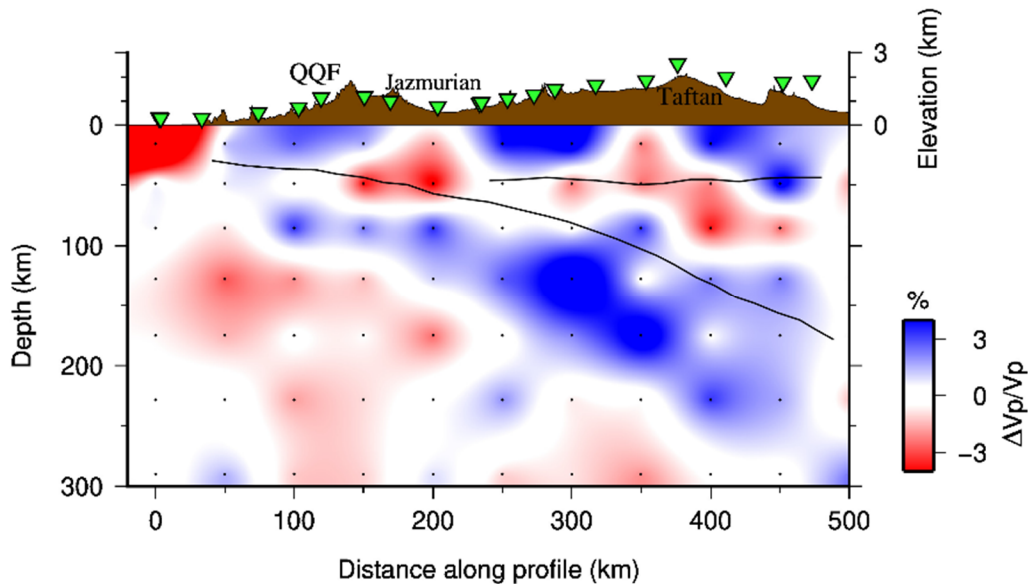

Figure 2. Red and blue colors denote slow and fast velocity anomalies, respectively. The scale for the velocity perturbation (in percent) is shown down the right side of the picture.

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