



Anisotropic Velocity Structure beneath northern part of the Zagros suture zone Iran

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We calculate S velocity models of the crust across the Zagros suture zone in Iran, at the collision between the Arabian Plate and Eurasia, which is responsible for the growth of the Zagros Mountains.

We compute teleseismic receiver functions at 45 stations belonging to a seismic transect with relatively short station spacing, crossing the collision boundary. We then focus on data from seven stations located in the near of the surface expression of the suture zone.

Through harmonic analysis and the subsequent inversion of the receiver function data at these stations, we obtain information on the geometry of the suture zone at depth, and on the deformation induced in the above and below crustal levels by the collision kinematics.

Within the receiver functions harmonics, we highlight the seismic signature of the suture zone related to the Zagros Main Recent Fault (MRF), and through 3-D modeling we unravel the anisotropic characteristics of the layers surrounding the suture, which can be interpreted as due to consistent foliation of the rocky packages involved in the thrusting process.