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of moho depth under the MDT seismic station (Midelt, Morocco) using receiver function technique

It is well known that the receiver function method can provide a very good local measurement of crustal thickness under a three components broadband station. In order to investigate crustal thickness beneath the MDT broad band seismic station located in Midelt region (Morocco), which belongs to the CTBTO International Monitoring System, we applied the H-k stacking technique proposed by Zhou and Kanamori based on stacking several receiver functions computed from different teleseismic events. This technique is based on a stacking algorithm which sums the amplitudes of receiver function at the predicted arrival times of the Moho P-to-S converted phase and the later multiple converted phases PpPs and PpSs+PsPs by different crustal thicknesses H and V_p/V_s ratios. The best estimations of crustal thickness H and V_p/V_s ratio are found when the three phases are stacked coherently. We used more than 60 teleseismic events recorded by MDT seismic station during the years 2016 and 2017, located between 30° and 90° and having magnitude greater than 6. After the computation of receiver functions, only 20 events which show coherent result are selected to be used in the H-k stacking technique. The estimated depth of moho beneath MDT seismic station is about 40 kilometers.

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