

# STUDYING THE GENERAL TRENDS OF MAKRAN SEISMICITY, USING WAVEFORM ANOMALIES

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The Mechanism of Earthquakes occurring below 100 km in earth or roughly below the Moho still remains mysterious. Classification of these "deep" quakes into intermediate and deep according to their occurring depths is also as roughly as the way we know about their mechanisms. Makran region in South-Eastern Iran exhibits earthquakes in this kind with high CLVDs, a more or less common property in deep events. These earthquakes, mainly caused by the active subduction zone in the region are rare and unique which adds to the difficulties of studying this region. Since there is no convenient domestic network coverage in the region and also there is so much little conclusive geophysical and geological evidence on the region (which causes many inefficiencies e.g. lack of a valid Green Function), usual seismological methods lead to an interpretational dead-end. Therefore, here a method is proposed to study this region based on the waveform anomalies observed in the event records of non-shallow quakes. This method allows one to compare the main event with other categories of events globally and deduce a comprehensive trend of seismotectonic structure.

The advantages of such a method with the aforementioned shortcomings over conventional inversion methods (e.g. waveform and moment tensor inversion) in a region like Makran are also demonstrated here. As the next step, those inversion methods are used to minimize the uncertainties posed on this method and a seismotectonic structure is proposed for the Makran region.

It should be noted that, this method also provides us with some clues to some questions raised about this region, like the reason for the differences in seismic activities between the eastern and western parts of Makran which are located in Pakistan and Iran respectively. Finally a rough understanding would be followed from this study about the 1945 Makran Tsunami and the reasons for many of the characteristics Makran region will be illustrated.

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