

Modeling the 2005, $M_w=6.0$ Earthquake in Makran, Using the Inversion of Body-waves

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In this study we have used the inversion of seismograms to determine different characteristics of March 13, 2005 earthquake in Makran with $M_w=6.0$ which could be considered as the largest well-recorded quake occurring in Makran in the global scale. This earthquake took place in the Makran seismotectonic province in south-eastern Iran about which there is not so much accumulative seismological evidence. Therefore considering this quake could help us improve our knowledge about the region. There is a faint belief that this event among others has occurred as a result of the Makran subduction zone which has made it much more interesting as the subject for seismological and seismotectonic studies.

The method we have adopted here is based on the inversion of body-waves to acquire the main characteristics of the source (mechanism, etc.). The rest of parameters are obtained as a result of deductive work on the existing accelerograms of this quake. The fact that these two approaches are insufficient in investigating the source parameters (in that aspect that since the region is not well-studied and a tangible Green Function could not be adopted) we have grasped at interpretation of coda waves to provide a more or less qualitative insight of the region which helps us in re-editing the presumed Green Function in a quantitative point of view. It should be noted that the diversity of announced epicenters for this event which is a good proof to the lack of data about this region due to various reasons (station coverage and very few geophysical and geological fieldworks to name few) has caused some to believe that the event has occurred in the Western part of Makran i.e. Pakistan. We hope that this study proves this event to be occurring in the Iranian side since it is in more agreement with the general trend of earthquake taking place in Iran. This fact will help us to come at a much better understanding about the structure of Makran region which is debated as an active subduction zone in the Middle East.