Geophysical Research Abstracts,
Vol. 10, EGU2008-A-00088, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-00088
EGU General Assembly 2008

Source parameters of the March 4, 1999 earthquake (Mw $\sim$ 6.6) of Oman-Line (S Iran) based on teleseismic Body-Waveform data

Shobayr Ashkpour (1), Seda Yolsal (2), Mehrdad Mostafazadeh (1) and Tuncay Taymaz (2)

(1) International Institute of Earthquake Engineering and Seismology (IIEES), Tehran, Iran, P.O.Box 19395/3913

(2) Istanbul Technical University, Department of Geophysical Engineering, Maslak 34469, Istanbul, Turkey

e-mails:s.ashkpoor@iiees.ac.ir, yolsalse@itu.edu.tr, mehrdad@iiees.ac.ir, taymaz@itu.edu.tr

We examine the source mechanism parameters and centroid depth of the 1999 March 4 earthquake (Mw = 6.6) occurred in the northern part of the Oman-Line area, south of Iran. This earthquake was large enough to produce high-quality long-period and broad-band seismic data recorded, and freely available through FDSN and IRIS consortiums. Thus, it provided an exceptional opportunity to study the complex tectonic processes of the transition zone at the Oman-Line region which is located at the north of Hormoz strait, where the southeastern part of Zagros thrust belt lies to west. We have studied the source mechanism parameters of this event by a least-squares body waveform fitting procedure described by Nábélek (1984), and have further examined those of the 2003 February 14 (Mw=5.7), and 2006 February 28 (Mw = 6) earthquakes occurred in the vicinity of the 1999 earthquake epicenter. These earthquakes have low-angle thrust mechanisms with sub-parallel strike to the Main Zagros Recent Fault (MZRF). They probably reflect the lower crust being subducted zone dipping to NNE direction with a low angle beneath the central Iran in this area. We calculate that the northward shortening and the slip rate is about $7.282\times10^{-8}\mathrm{yr}^{-1}$, and 5.68 mm yr

$^{-1}$ which is only 23 per cent of those deduced from GPS measurements in south of Iran, respectively. It is widely known that the study region has a clockwise rotation about the vertical axis caused by a cluster of earthquakes occurred recently.