

## **Seismicity of the Bushehr region with emphasis on the destructive earthquake of 2013, Kaki, in Zagros, southwest Iran**

Maryam Sedghi (1,2), Ramak Heidari (3,4), Mohammadreza Gheitanchi (1,3), and Abbas Jazayeri (2)

(1) Geophysics Group, Science Department, Azad university north Tehran branch, Tehran, Iran (m\_sedghi2002@yahoo.com),

(2) Natural Disaster Research Institute, UNESCO chair on natural disaster management, Tehran, Iran

(m\_sedghi2002@yahoo.com), (3) Geophysics Group, Science Department, Sciences and Researches university, Tehran, Iran,

(ramak.ut@gmail.com) , (4) Iran House Building Company, Tehran, Iran, (ramak.ut@gmail.com)

Iran has a long history of destructive earthquakes that have already left at least 126,000 dead during the 20th and 21st centuries. The study area included a part of the Zagros active seismotectonic province, in south Iran. On a broad scale, the seismotectonics of southern Iran are controlled by active convergence between the Arabian and Eurasian tectonic plates. The rate of convergence between Arabia and Eurasia is approximately 30 mm/yr. The April 9, 2013 M6.3 earthquake in southern Iran occurred as result of northeast-southwest oriented thrust-type motion in the shallow crust of the Arabian plate, the depth and style of faulting in this event are consistent with shortening of the shallow Arabian crust within the Zagros Mountains in response to active convergence between the Arabian and Eurasian plates. To study the source parameters, we modeled the waveforms recorded by the national seismic network and used the aftershock sequence of the 2013, Mw 6.3 Kaki-Bushehr earthquake that was widely felt in Bahrain, Iran, Kuwait, Qatar, Saudi Arabia and United Arab Emirates. Study of spatial distribution of epicenters of aftershocks of this earthquake indicated that the causative fault for 2013, Mw 6.3 Kaki-Busher earthquake is mountain front fault (MFF). The vertical cross section of aftershocks shows that the causative faults dip is towards northeast. It was observed that the depth of aftershocks is within 15-20 km indicating the thickness of seismogenic zone in the area.