



**Ministry of Industry Mine and Trade  
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**Preliminary results of earthquake geology studies within  
the macroseismic zone of triple earthquakes on July 2,  
2022 Sayeh Khosh east of Bandar Lengeh (magnitudes 6.1,  
6.1 and 6.3), South Iran**

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Within the central part of the Alpine-Himalayan orogenic belt, Iranian Plateau is actively squeezing between Arabian and Eurasian plates to the south and north, respectively. In response, several destructive moderate-strong seismic events occur in this active tectonic area. At the 2:02 (local time) in the morning on Saturday, July 2, 2022, three successive earthquakes were occurred in less than two hours in south of Iran. These quakes (with magnitudes of 6.1, 6.1 and 6.3) were affected a relatively sparsely populated area located in the east of Bandar Lengeh port in Hormozgan province. Based on official news, according to extensive structural damages, these quakes have been accompanied by at least 49 casualties (5 killed and 44 injured) and so many people became homeless by these events. The almost sparseness population of the macroseismic zones of the quakes and awareness of people (due to seismic swarm in the last weeks) are the important issues cause a few casualties during the events. In a general view, the geological features as well as the interferogram evidence of these earthquakes can be tracked along an almost concentrated zone on the epicentral domain (between Berkeh seflein Village, to the west and Bandarkhamir Port, to the east).

In this study, according to the characteristics of the seismic events (the depth, the magnitude, etc.), and then the probability of earthquake surface faulting, we have performed the morphotectonic field study as well as the InSar analysis. Consequently, we have been tried to use all the evidence such as the situation of all systematic surface structural cracks and fissures that were aligned parallel to the nodal planes of the earthquakes' focal mechanisms and along active fault strands of the region. In addition, the concentrated recent slope instabilities within the epicentral area (i.e. lateral Spreading, rock falls, rock avalanches, large dynamic co-seismic landslides) as well as stone jumping sites, liquefaction sites

and the situation of the maximum damaged cities and villages have been used to limit the macroseismic zone of the seismic events and the causative fault zone.