



DEVELOPMENT OF SHAKE MAPS FOR THE SULTANATE OF OMAN

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This study presents the studies towards the development of shake-maps after a real earthquake, or for scenario earthquakes originating from earthquake sources within and around the Sultanate of Oman. Major earthquake sources that are important for the Sultanate of Oman are the Makran zone, the Zagros zone, the Zendan-Minab system, the Oman Mountain zone, the Owen fracture zone and the Gulf of Aden zone. The earthquakes that take place on these zones, particularly those from the Makran zone, already resulted and are likely to result in ground shaking levels that may be significant for the country. The hazard module of software package ELER was customized for use in the development of shake maps in the Sultanate of Oman. For this purpose (1) Active major faults and systems within and around Oman are defined and implemented; (2) Ground Motion Prediction Equations suitable for use and representative of tectonic conditions in Oman are identified and implemented; (3) The effect of local site conditions in resulting ground shaking levels are attended by implementing the Vs30 maps into ELER; and (4) Scripts are developed for the consideration of ground motion data coming from strong motion stations and from seismometers in and around Oman. They are used in the adjustment of ground motion distribution maps, such as peak ground acceleration map, peak ground velocity map and spectral acceleration maps produced using ground motion prediction equations. Examples of runs reflecting the use of newly adopted information are presented.

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