

عنوان مقاله:

Perspectives of innovative approaches in seismic hazard evaluation

محل انتشار:

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خلاصه مقاله:

A proper evaluation of the seismic hazard, and of the seismic ground motion due to an earthquake, can be accomplished by following a scenario-based deterministic approach in view of the limited seismological data, with a complementary check based on both probabilistic and empirical procedures. The definition of realistic seismic input can be obtained from the computation of a wide set of time histories and spectral information, corresponding to possible seismotectonic scenarios for different source and structural models. The realistic modelling of the ground motion is a very important base of knowledge for the preparation of groundshaking scenarios that represent a valid and economic tool for the seismic microzonation. This knowledge can be very fruitfully used by civil engineers in the design of new earthquake-resistant constructions and in the reinforcement of the existing built environment, and, therefore, supply a particularly powerful tool for the prevention aspects of Civil Defense. Where the numerical modelling is successfully compared with records, the synthetic seismograms permit the microzoning, based upon a set of possible scenario earthquakes. Where no recordings are available the synthetic signals can be used to estimate the ground motion without having to wait for a strong earthquake to occur (pre-disaster microzonation). In both cases the use of modelling is necessary since the so-called local site effects can be strongly dependent upon the properties of the seismic source and can be properly defined only by means of envelopes. In fact, several techniques that have been proposed to empirically estimate the site effects using observations convolved with theoretically computed signals corresponding to simplified models, supply reliable information about the site response to non-interfering seismic phases, but they are not adequate in most of the real cases, when the seismic sequel is formed by several interfering waves. The skill of seismology to estimate realistic ground motions at a particular site should be fully exploited by seismic engineers. In fact, even if recently strong motion records in near-fault, soft soil, or basin conditions have been obtained, their number is still very limited to be statistically Fourth International Conference of Earthquake Engineering and Seismology 12-14 May 2003 Tehran, Islamic Republic of Iran significant for seismic engineering applications. The quantification of the critical ground motion expected at a particular site requires the ... identification of the parameters that characterize the severity and the d

کلمات کلیدی:

