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ARTIFICIAL EARTHQUAKE RECORD GENERATION FOR ASSALUYE CHEMICAL COMPLEX

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Abstract:

In earthquake resistance design of structures seismic isolation is an effective method. Base isolated structures have better performance than the conventional ones. Isolated structures are sensitive to slight variations of the earthquake excitation. As a result artificial earthquakes consistent with the site characteristics, codes and structures have to be generated. In this paper, the sequence of generating an artificial accelerogram which is compatible to a target response spectrum is described. The far field accelerograms are generated for the Assaluye Chemical Complex region in Iran by considering the effect of site condition, fault distance and magnitude. Determination of site parameters is performed by processing five recorded earthquakes with the site properties. The process is based on generating a white noise, shaping it to create a shot noise and filtering it to find surface ground acceleration. By scaling the generated accelerograms based on relevant code, design accelerograms are obtained. For the site under consideration the required far field artificial accelerograms are developed and used in analysis of base isolated structures in the site.

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