

Abstract

Seismic zonation can be considered to consist of a map which defines areas having equal seismic conditions, be it ground motion, ground failure or susceptibility to surface fault rupture.

Earthquake ground motion is directly related to seismic forces acting on structures. Thus seismic zoning for ground motion provide an important initial indicator of seismic risk. Assessment of ground motion depends on the regional seismicity, attenuation of ground motion Intensity and local site effects on the ground motion. In this study the process of zoning for expected ground motions was carried out for Kenya. Seismicity data comprised of historical and instrumental data during the period between 1900 and 1992. In determination of maximum earthquake motions the probabilistic approach was used where seismicity is evaluated as the probability of earthquake occurrence during the return periods of 50, 100, 150, 200 and 300 years. A model proposed by S. Hattori was used in the analysis where attenuation models proposed by Kanai, Oliveira and McGuire are used. In the study local site effects refer to modification of predicted rock outcrop 'reference' motion to give motions at the local site in question based on grossly defined geology.