Evaluation of linear elastic dynamic analysis behavior on RC buildings in Sabah subjected to moderate PGA

ABSTRACT

Seismic performance of existing buildings in Southeast Sabah needs further examination, as there has been limited research. It is significant to explore the buildings respond to linear elastic dynamic analysis, especially considering that most reinforced concrete (RC) buildings insufficient earthquake-resistant technology. The current study aims to establish the correlation between peak ground acceleration (PGA) and the performance point of buildings under moderate PGA of 0.12g, 0.14g, and 0.16g, and then to assess the expected performance level of three RC buildings. The selection of three buildings within a 10 km radius from the active faults area. The buildings undergo an analytical method that necessitates the utilization of computational techniques to determine their capacity curve, demand curve, and performance point through the application of pushover analysis under the different of PGA. The performance point of buildings is determined by the intersection between capacity and demand curves, indicating Life Safety (LS) in inelastic range. This study critically evaluates the performance point of buildings that indicates inelastic displacement of the roof according to the intersection between capacity and demand curves under the various PGA.