

Studi perilaku struktur gedung akibat pengaruh gempa dengan mempertimbangkan efek soil-struktur interaction = Study behavior of building structure due to earthquake loading with considering effect of soil-structure interaction

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Abstrak

ABSTRAK

Pada penelitian ini, struktur akan dimodelkan beserta tanah disekelilingnya dengan program SAP2000 dimana tanah dimodelkan sebagai linear solid 3D element. Analisis gempa yang digunakan berupa analisa linear time history. Variasi yang model mencakup ketinggian struktur dan juga variasi perletakan, yaitu berupa perletakan jepit dan perletakan tanah dengan nilai modulus elastisitas yang berbeda-beda pada lapisan tanah dimana pondasi berada. Hasil dari penelitian ini diperoleh kesimpulan bahwa efek pengaruh dari SSI tidak terlalu banyak berbeda dengan struktur perletakan jepit baik untuk periode getar struktur maupun respon linear struktur.

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ABSTRACT

In this study, structure will be modeled along with the surrounding soil with finite element program SAP2000, where the soil will be modeled as a linear 3D solid element. Earthquake analysis used in this study are Linear Time History analysis. Model variations are variations in the height of the structure and variations of boundary condition in the foundation. First variation in boundary are fixed foundation where the building assuming laying in the rock, and the second variation are the soil around the building will be modeled with variations of modulus elasticity. The result of this study concluded that the effect of soilstructure interaction are not too much different from the structure where the fixed foundation assuming, the period of structure and linear response of structure are almost same.