عنوان مقاله:

Multi Objective Optimal Fuzzy Logic Controller for Seismically Excited Nonlinear Buildings

محل انتشار:

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نویسندگان:

Mohsen Askari - *MSc Student, Mechanical Engineering Department, Iran University of Science and Technology*

Amir H. Davaie-Markazi - *Associate Professor, Mechanical Engineering Department, Iran University of Science and Technology*

خلاصه مقاله:

This paper focuses on a benchmark problem for control of seismically excited nonlinear buildings proposed by Ohtori (2004) and reports the application of Multi Objective Optimal Fuzzy Logic Controller in a 3-storey building. Since reduction of damage during earthquake in a building is one of the most important aims of structural control, minimization of two of the building damage indices is considered in this paper. All of the rule-bases, MFs and scaling factors are tuned well through a recursive optimization algorithm and using a pareto optimal solution, namely NSGAII. The performance of the controlled structure is validated through computer simulations. The proposed control scheme satisfies the control constraints and is tabulated according to the evaluation criteria provided by the benchmark problems for comparison with other schemes. The destructive Northridge earthquake (1994) with two different intensities is used as the seismic excitation. As a conclusion, the proposed method reduces two of the most important .damage indices under seismic excitation

کلمات کلیدی:

Fuzzy control- Genetic algorithm- NSGAII- Nonlinear building