

عنوان مقاله:

A Semi Active Control Strategy for Seismic Response of Plan-Asymmetric Buildings

محل انتشار:

دهمین کنگره بین المللی مهندسی عمران (سال: 1394)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Mohamad M. Zafarani - Faculty of Civil Engineering, Isfahan university of Technology Isfahan, Iran

Amir M. Halabian - Faculty of Civil Engineering, Isfahan university of Technology Isfahan, Iran

Saeed Behbahani - Faculty of Mechanical Engineering, Isfahan university of Technology Isfahan, Iran

خلاصه مقاله:

Due to architectural or functional constraints, application of traditional approaches such as redistributing the stiffness and/or mass properties is not usually practical choice to reduce excessive deformations of asymmetric-plan buildings. Structural control strategies represent a relatively new area to improve the performance of such systems. This paper addresses the use of Magnetorheological (MR) dampers as a new semi active device to mitigate seismic torsional responses of asymmetric building. Due to the highly nonlinear dynamic behavior of MR dampers, existing uncertainty of seismic excitation and also torsional behavior of the system, development of a robustness control algorithm like fuzzy is regarded as a significant challenge. Application of advanced optimization processes to create admissible fuzzy parameters and attain the desired level of performance is investigated in this study. A set of asymmetric buildings are used to evaluate effects of this optimized control strategy in reducing the torsional response of building.

کلمات کلیدی:

Fuzzy control, Optimization approach, MR damper, Asymmetric building

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/363832>

