

عنوان مقاله:

Assessment of Semi-Active Tunes Mass Damper Application in Suppressing Seismic-Induced Vibration of an Existing Jacket Platform

محل انتشار:

مجله بین المللی فناوری دریایی، دوره 6، شماره 1 (سال: 1395)

تعداد صفحات اصل مقاله: 10

نویسندگان:

Samira Babaei - *University of Qom*

Roohollah Amirabadi - *University of Qom*

Touraj Taghikhany - *Amirkabir University of Technology*

خلاصه مقاله:

In this study, mass, stiffness and damping matrices of the Nosrat jacket; located in Persian Gulf; equipped with Semi Active Tuned Mass Damper (SATMD) system have been derived after modeling the structure in SACS software. Owing to huge number of the degrees of freedom in the model, computation of on-line control of SATMD was time consuming. For this purpose, the size of the model was reduced in the finite time and frequency intervals by programming in MATLAB software. The SATMD utilized in this study, contains a passive Tuned Mass Damper (TMD) and two Magneto Rheological (MR) dampers in order to illustrate the control effect of SATMD. The selected algorithm to control and optimize the performance of MR damper is Linear Quadratic Gaussian (LQG). Time history responses of the platform in cases with and without SATMD have been compared under three different ground motions. Results indicate that jacket equipped with SATMD can dramatically reduce the seismic-induced dynamic responses.

کلمات کلیدی:

Nosrat Jacket, Persian Gul, SATMD, LQG Algorithm, Seismic-Induced Responses

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1397063>

