

عنوان مقاله:

Application of Non-Newtonian Fluids in the Industrial Buffers

محل انتشار:

نهمین سمینار سراسری بین المللی آسانسور و پله برقی (سال: 1397)

تعداد صفحات اصل مقاله: 11

نویسندگان:

.Mohammadreza Eskafi - Asanbar Hezareh Sevom Co

.Reza Baratali - Asanbar Hezareh Sevom Co

خلاصه مقاله:

A custom-made nonlinear viscoelastic damper is designed for several industrial applications. The damper is structurally similar to typical commercial dampers and the design is solely based on the choice of the viscoelastic material used as damping agent in the damper. With rheological parameters of a selected material from experiment, the coefficients of Johnson-Segalman constitutive equation model are evaluated by fitting the data. The problem was first formulated by writing the governing equations for the flow over flat plate. A numerical scheme of finite difference method is applied to solve the governing equations in time domain. The model is capable of predicting the nonlinear amplitude-dependent behavior of viscoelastic dampers under single and multiple-frequency excitations. In the energy dissipation buffer, non-Newtonian fluids are used instead of oil for increasing the control and decreasing the force of elevator's movement. In fact, in this concept, special fluids to have the best damping task in buffers or any other .bumpers are acknowledged and increasingly investigated

کلمات کلیدی:

Viscoelastic Damper, Rheological Model, Johnson Segalman Model, Stability analysis, Non Newtonian Flow, Elevator .Buffers

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