Research on low-frequency mechanical characteristics of the MR dampers in ship isolators(PDF)

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Title: Research on low-frequency mechanical characteristics of the MR dampers in ship isolators

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摘要: A new isolator composed of a steel rope spring and a magneto-rheological (MR) damper was designed and a study on low-frequency mechanical characteristics of MR dampers in isolators was carried out. It used the characteristics of the MR damper,such as fast response,controllable damping,small energy consumption,wide dynamic scope,and great adaptation. The relationships between MR damping forces and influencing factors were analyzed based on experimental data. The results show that damping force is not only related to structural dimensions,but also closely related to controllable current and vibration frequency. Finally,the empirical formula for damping forces was corrected,and the relationship between correction coefficients and factors analyzed.

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