
Abstract

The use of MR fluid in damper technology makes the damping behavior can be changed without change the geometry of the damper. In MR fluid there are magnetic particles that will change the viscosity if a magnetic field is applied. To research the nature of MR damper in reducing vibration, a test setup is needed. This test setup will be used to collect data that will be used to analyze the value of the default damping coefficient. For this research, one degree of freedom spring mass damper vibratory system is developed, and through experiment, time displacement curve is obtained. The time displacement curve illustrate the nature of the vibratory system. To compare experiment result to the theory, time displacement curve that illustrate the theory of vibration in Matlab programming is developed. The features of this setup are: displacement up to $\pm 2,5$ mm, moving mass variations from 28.5 grams to 53.5 grams, and maximum spring length after pre-tensioning 25 mm. With these features, the default damping coefficient can be analyzed separately from the damping generated from the MR damper. The damping characteristic in various masses and various displacement ranges have been analyzed. The effect of MR fluid when a magnetic field is applied and not applied at a displacement of 1.5 mm has also been analyzed.

17 figures
6 tables
50 pages