

## Vibration Analysis of Cantilever Beam of Magneto Rheological Fluid

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### ***Abstract:--***

This study presents techniques used to minimize an active vibration in smart beam. It consists of an aluminum beam model in cantilever configuration. Magneto Rheological fluid (MRF) has variety of application in all industrial vibration control system. Now-a-days this fluid is used in design of buildings and bridges, robotics, home appliances, seat suspensions, clutches, automobile suspension etc. The main purpose of MRF used in this application because of ability of MR fluid i.e. when an magnetic field applied it changes rheological properties rapidly and its precise controllability. By detecting the vibration produced in any application we can apply this concept of vibration control to that system. We can use quantity of fluid depends on dimension of MR pocket and intensity of vibration in system. The testing is all about the reduction in the amplitude of vibration of system by increase in applied voltage to MR cantilever beam (MRF-336AG).

Form the table and graph; we conclude that when amplitude of vibration decrease, magnification factor also decreases. When damping increases, damping coefficient is increases and transmissibility decreases. Hence vibration is reduces.

### ***Index Terms***

Cantilever Beam, Vibration, MR Fluids, FFT analysis.