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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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Cairo University

PERFORMANCE ANALYSIS OF EDDY CURRENT SHOCK ABSORBERS

By

Ahmed Ali Ahmed Abdallah

A Thesis Submitted to the
Faculty of Engineering at Cairo University
In Partial Fulfillment of the
Requirement of the Degree of

MASTER OF SCIENCE

in

ELECTRICAL POWER AND MACHINES ENGINEERING

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Under supervision of

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Title of Thesis: "Performance Analysis of Eddy Current Shock Absorbers"

Keywords: shock absorber - eddy current- electromagnetic damping.

Summary:

The main target of this thesis is to reach the optimum design of the proposed damper which results in the best damping effect after adding to the traditional suspension system. To achieve this target, the model was solved many times at different design cases. First the Effects of adding an aluminum sleeve to the actuator is studied in chapter four. The relation between the sleeve thickness and the damping force is examined. Second the damper was studied from another point of view in chapter five, by changing its configuration. Removing the aluminum sleeve, lower number of magnets and two opposite magnets groups are the studied design cases. The steady state performance of the damper at each design case was discussed. It was found that there is an optimum design case at which the best damping performance is obtained.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.
I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

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Date: 10/7/2019

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Table of Contents

List of Tables

List of Figures