Abstract— Less than 200 words describing what the paper is about and what the general results were.

I. INTRODUCTION

The final report for the structural engineering module should provide an overview of what you have accomplished in homework 1-3 during this module. The report must use this Microsoft Word template and should be no more than three pages in length. If you can convey all of the necessary information in less than three pages, that is fine. The report should have text as well as figures, plots tables and equations, as appropriate.

The report should be broken into sections. The abstract should provide a very brief and concise description of the report and the findings of the report. The first main section of the paper should be an introduction. The introduction should provide necessary background information, a description of what was done, and a specific outline of what will be discussed in the report. The next sections should discuss the “Experimental Setup” (describing the physical building model, how it is excited and what is measured), “Analytical Model” (presenting the equations and parameters used to model the system analytically), and the “Experimental Results” describing the experiment and presenting the results, as compared to the analytical results. The final sections should include a conclusions, where you briefly reiterate the findings of your report, and acknowledgements (did you receive any support from any classmates, etc.) and references.

II. FIGURES, PLOTS, TABLES AND EQUATIONS

Figures and plots can be very helpful in presenting your work. Be sure to cite all figures (as well as plots and tables) in the text, such as – a schematic of a hybrid test is shown in Figure 1. Figure 2 shows a time history plot from Matlab. The figures caption should be concise, yet provide sufficient information regarding the figures. The figures should appear after they are cited in the text.

Tables can help to convey information in an efficient manner and can be used. An example of a table is shown in Table 1. Tables (and equations) have their own sequential numbering separate from the figures.

![Fig. 1. A schematic of the experimental setup showing the computer structure model and the three physical MR dampers.](image)

<table>
<thead>
<tr>
<th>Amplitude (mm)</th>
<th>Frequency (Hz)</th>
<th>2.54</th>
<th>12.7</th>
<th>25.4</th>
<th>50.8</th>
<th>101.6</th>
<th>152.4</th>
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</thead>
<tbody>
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<tr>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*indicates a sinusoidal excitation that will be tested at each of five constant damper current levels (0, 0.25, 0.5, 1.0, 2.0 amps)
Equations are very important in engineering and should be cited in the report by equation number, such as (1) and (2) below.

\[
\begin{bmatrix}
\ddot{x}_0 \\
\dddot{x}_0
\end{bmatrix} =
\begin{bmatrix}
0 & 1 \\
(-k_0 - k_1)/m_0 & (-c_0 - c_1)/m_0
\end{bmatrix}
\begin{bmatrix}
x_0 \\
\dot{x}_0
\end{bmatrix}
\]

\[+
\begin{bmatrix}
0 & 0 \\
k_1/m_0 & c_1/m_0
\end{bmatrix}
\begin{bmatrix}
x \\
\dot{x}
\end{bmatrix}
+ \begin{bmatrix}
0 \\
-1/m_0
\end{bmatrix} f_0 \tanh(\dot{x}_0/V_{ref})
\]

\[f = [-k_1 - c_1 \begin{bmatrix}
x_0 \\
\dot{x}_0
\end{bmatrix} + \begin{bmatrix}
k_1 \\
c_1
\end{bmatrix} \begin{bmatrix}
x \\
\dot{x}
\end{bmatrix}]
\]

III. CONCLUSION

The conclusions reiterate what you found in your study. The conclusions would be an appropriate place to indicate any issues or problems and how they might be resolved in the future.

ACKNOWLEDGMENT

The author would like to acknowledge the support of Anne Other in determining the mass and stiffness of the test structure.

REFERENCES


[3] …