

A PARAMETRIC COMPARISON OF BUILDING CODE SEISMIC PROVISIONS

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A Thesis

**Master of Science in Civil Engineering**

of the Faculty of the Graduate School

The most common method used by engineers to determine seismic loads on buildings is the equivalent static method. The equivalent static method is the simplest and most conservative procedure by which seismic loads may be determined. The actual procedure to be followed is contained within the local governing building code. Currently in the United States, there are four building codes in use. These are the International Building Code, Uniform Building Code, Standard Building Code, and the BOCA/National Building Code. This thesis presented an overview of the equivalent static seismic analysis methods contained in each of these codes and a parametric comparison of the equivalent static procedures of the newer International Building Code to the three older codes. Each term that affects the magnitude of the seismic base shear determined from the equivalent static method of the International Building Code was compared to its equivalent in the other codes in order to determine which factors have a greater effect on any differences in the code to code results. Also, contour maps were generated showing the regional effects of changes in the ground motion and soil factors in the IBC.

In Partial Fulfillment

of the Requirements for the Degree

**MASTER OF SCIENCE**

**Civil Engineering**

**MAY 2004**