

DIHEDRAL AND QUATERNIONIC HOMOLOGY

BY WALL RESOLUTIONS

BY

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A dissertation submitted to the Graduate School

in partial fulfillment of the requirements

for the degree

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Major Subject: Mathematics

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“Dihedral and Quaternionic Homology by Wall Resolutions,” a dissertation prepared by Eduardo Quiñonez-Rico in partial fulfillment of the requirements for the degree, Doctor of Philosophy, has been approved and accepted by the following:

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DEDICATION

I dedicate this work to my daughter Daniela, my mother Alejandrina, my sister and brothers Gabriela, Jaime, Miguel, and David.

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I would like to thank my advisor, Ross E. Staffeldt, for his encouragement, interest, and patience. Personally, I would like to thank him for sharing his knowledge which has enriched my study in topology.

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PROFESSIONAL AND HONORARY SOCIETIES

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FIELD OF STUDY

Major Field: Algebraic Topology

ABSTRACT

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Dr. Ross E. Staffeldt, Chair

Type your abstract here. Do not delete anything before this line; otherwise, you will mess up the spacing.

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1 Instructions for Using the Thesis Shells

We give a brief list of instructions for using the thesis shells with Scientific Workplace, some of which are listed on the department's web page.

You will need to download all of the front matter files along with `nmsuth01.cls`, `main-sw.tex`, and `thesisbody.tex`. Place all of these files in the same directory. You should also read the file `main-sw.dvi` or `main-sw.ps` or `main-sw.pdf` for more detailed information about using these files.

Write the body of your thesis, using any style you wish. You may also write an abstract page in Scientific Workplace. Once you are finished with your typing, open the file `thesisbody.tex`, delete any text you find, except for the grey boxes right before the sample references. Then click on file, then import contents, and then locate the file for your thesis. Then save the file. Next, edit the files `title-sw.tex`, `approval-sw.tex`, `dedica-sw.tex`, `ackno-sw.tex`, `vita-sw.tex`, and `abstract-sw.tex`, by putting in the appropriate data. Make sure you do not delete any of the blank spaces or other formatting commands. If you typed an abstract, open the file `abstract-sw.tex`, place the cursor immediately before the first line of the abstract itself (which starts `Type your abstract here`), click on file, then import contents, and enter the name of your abstract file. Finally, delete the existing line starting with `Type your abstract here`, and then save.

To compile your document, click on typeset, then preview, and change the number of passes to three. You should only compile main-sw, not thesisbody.

1.1 Notes for Typing

1. Do not use chapter headings in your thesis. The most major heading should be a section heading. You will need to change your headings if you used chapter heads.
2. Be careful when editing the front matter documents; the formatting commands need to be kept as they are if you want your thesis correctly formatted.
3. If you do not have tables and/or figures, delete the appropriate line in the main-sw.tex file.
4. If you typed your thesis in several parts, import all of them into the file thesisbody.tex.
5. You are encouraged to read the file main.dvi or main.ps or main.pdf for more detailed information about typing your thesis.

1.2 What do you do if you have a really long heading, such as this long subsection heading?

If you have headings that are more than one line in the table of contents, then thesisbody.tex will need to be modified. Perform the following steps:

1. preview your thesis to find out which headings take more than one line. For each, determine where the first line of the heading ends.
2. at the location where the first line of a long heading ends, add a tex field (click on insert, then field, then tex field) with the following command:

```
\vspace{-\singlespace} \\
```
3. before clicking ok, click the box named Encapsulated at the top left of the tex field screen.

To see how this works, when you preview this document, you will see the first line of the section head ending after the work this. We then modify the section heading as follows.

1.3 What do you do if you have a really long heading, such as this long subsection heading?

You will see, in the table of contents and the document itself the difference between the two versions of the subsection heads.

1.4 Figures and Tables

If you have figures and or tables in your document, and you want them to show up in a list of tables and list of figures, there are a few things you must do. First, any graphic that is to show up in the list of figures should be a floating graphic. If you have a graphic, click on it to open the small blue icon at the bottom right of the graphic, then click on the icon. Click on the layout tab, and click the button labeled floating. For tables, make them by adding the fragment named *Table - (4 x 3, floating)*. Open the grey box named caption and type in your caption, making sure not to change any of the tex code. If you want to refer to the table, change the text inside the `\label` command. If you have already typed a table, add the fragment, delete the sample table, and place the grey boxes around your table in the same position as in the sample.

If you do not have figures and or tables, you should edit the main-sw.tex file. You will see the following grey boxes:

Delete the appropriate entire line of these boxes if you do not have tables or figures.

Here is an example of a figure and a table.

Figure 1.1: example figure

Head	Head	Head
entry	entry	entry
entry	entry	entry
entry	entry	entry

Table 1.1: example table

Head	Head	Head
entry	entry	entry
entry	entry	entry
entry	entry	entry

Table 1.2: example table two

1.5 Footnotes

If you have long footnotes¹, you will have to reformat them since the graduate school wants footnotes single spaced. Also, if you have more than one footnote on a page, they want doublespacing between footnotes. To accomplish this, at the beginning of the footnote box, insert a tex field (click on insert, typeset object, tex field, or some similar set of menu items if you are using a version of Scientific Workplace earlier than 4.0). In the tex field, add the line

$$\backslash\text{setlength}\{\backslash\text{baselineskip}\}\{\backslash\text{singlespace}\}$$

You must do this to each footnote. If you have more than one footnote on a page, to each but the last footnote on the page add a tex field in the footnote box after the footnote text containing the line

$$\backslash\text{vspace}\{\backslash\text{singlespace}\}$$

The footnotes in this section have done these changes; you will see the result in the compiled version.²

¹What do you do if you have a really long footnote and you do not wish to make it smaller? The graduate school will want footnotes single spaced, and if you have more than one footnote on a page, doublespacing between footnotes.

²This is the second footnote on the page.

1.6 References

There are two ways to handle references in LaTeX documents, typing them directly or using BibTeX. Examples of typing them directly are given below; the gray TeX boxes immediately before the references are needed to make the references be formatted correctly and have the references section show up in the table of contents. No information on how to use BibTeX will be given here; we only point out that to use BibTeX, you need to click on insert, typeset object, bibliography, click on your BibTeX file and the appropriate style. You should do this on the bottom line in main-sw.tex and not in thesisbody.tex.

REFERENCES

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