MY THESIS

BY

A. U. THOR

A Dissertation submitted to the Graduate School
in partial fulfillment of the requirements
for the Degree

Doctor of Philosophy

Major Subject: Physics

Minor Subject: Electrical Engineering

New Mexico State University
Las Cruces, New Mexico

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" My Thesis ," a dissertation prepared by A. U. Thor in partial fulfillment of the requirements for the degree, Doctor of Philosophy , has been approved and accepted by the following:

J. C. Stenerson
Dean of the Graduate School

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Date

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DEDICATION

This work is dedicated to my mother and father and to the many others, though unnamed, who helped me in the completion of this task.

(Note: The Dedication section is optional.)

ACKNOWLEDGMENTS

The acknowledgment is the place to thank the faculty, staff, family, and friends who have assisted you in preparing your thesis or dissertation. You may also acknowledge any financial support or special research materials given you.

Copyright permissions may also be acknowledged here by stating that: (1) permission has been granted for reproduction of tables, tests, and other copyright protected items and (2) gives the source of the permission.

Use a Preface rather than Acknowledgments when the research is discussed, for example, "the motivation for the study, the background of the project, the scope of the research, and the purpose of the paper" (Turabian, 1996, p. 7-8).

(Note: The Acknowledgments section is optional.)

VITA

Born May 16, 1962 etc....This is a vita–a simple biographical sketch–not a curriculum vitae. Use a simple chronological order.

N. B. Abu-Ghazaleh and P. A. Wilsey, "Models for Control Unit Synchronization for Shared Control Architectures," *Journal of Parallel and Distributed Computing.*

N. B. Abu-Ghazaleh , P. A. Wilsey , X. Fan, and D. A. Hensgen, "Synthesizing Variable Instruction Issue Interpreters for Implementing Functional Parallelism on SIMD Computers," *IEEE Transactions on Parallel and Distributed Systems.* April 1997 abstract.

N. B. Abu-Ghazaleh , and P. A. Wilsey , "Variable Instruction Scheduling for MIMD Interpretation on Pipelined SIMD Machines and for Compositional Instruction Sets," *Concurrency: Practice and Experience.* Jan. 1997. abstract.

X. Fan, N. B. Abu-Ghazaleh , and P. A. Wilsey , "On the Complexity of Scheduling MIMD Operations for SIMD Interpretation," *Journal of Parallel and Distributed Computing,* Vol 29, No 1, 91-95, August 1995. abstract.

R. A. Bagley , P. A. Wilsey, and N. B. Abu-Ghazaleh, "Composing Functional Unit Blocks for Efficient Interpretation of MIMD Code Sequences on SIMD Processors," *Parallel Processing: CONPAR 94 - VAPP VI* (LNCS 854), B. Buchberger and J. Volkert (eds), 616-627, September 1994. abstract.

The above list of publications is done using a Custom List which provides a single space environment for the publication list.

ABSTRACT

MY THESIS

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Put the abstract here. The abstract must have a (1) statement of the problem, (2) an exposition of methods and procedures, and (3) a summary of the findings. The length may not exceed 350 words.

CONTENTS

LIST OF TABLES

CHAPTER 1

SAMPLE MATHEMATICS AND TEXT

1.1 In-line and Displayed Mathematics

The expression $\sum_{i=1}^{\infty} a_i$ is in-line mathematics, while the numbered equation

$$\sum_{i=1}^{\infty} a_i \tag{1.1}$$

is displayed and automatically numbered as equation 1.1.

Let H be a Hilbert space, C be a closed bounded convex subset of H, T a nonexpansive self map of C. Suppose that as $n \to \infty$, $a_{n,k} \to 0$ for each k, and $\gamma_n = \sum_{k=0}^{\infty} (a_{n,k+1} - a_{n,k})^+ \to 0$. Then for each x in C, $A_n x = \sum_{k=0}^{\infty} a_{n,k} T^k x$ converges weakly to a fixed point of T [**?**].

Two sets of LaTeX parameters govern mathematical displays.[1] The spacing above and below a display depends on whether the lines above or below are short or long, as shown in the following examples.

A short line above:

$$x^2 + y^2 = z^2$$

and a short line below.

[1] LaTeX automatically selects the spacing depending on the surrounding line lengths.

A long line above may depend on your margins

$$\sin^2\theta + \cos^2\theta = 1$$

as will a long line below. This line is long enough to illustrate the spacing for mathematical displays, regardless of the margins.

1.2 Mathematics in Section Heads $\int_\alpha^\beta \ln t dt$

Mathematics can appear in section heads. Note that mathematics in section heads may cause difficulties in typesetting styles with running headers or table of contents entries.

1.3 Theorems, Lemmata, and Other Theorem-like Environments

A number of theorem-like environments is available. The following lemma is a well-known fact on differentiation of asymptotic expansions of analytic functions.

Lemma 1 *Let $f(z)$ be an analytic function in $\mathbb{C}_+$. If $f(z)$ admits the representation*

$$f(z) = a_0 + \frac{a_1}{z} + o\left(\frac{1}{z}\right),$$

for $z \to \infty$ inside a cone $\Gamma_\varepsilon = \{z \in \mathbb{C}_+ : 0 < \varepsilon \le \arg z \le \pi - \varepsilon\}$ then

$$a_1 = -\lim z^2 f'(z),\ z \to \infty,\ z \in \Gamma_\varepsilon. \tag{1.2}$$

Proof. Change z for $1/z$. Then $\Gamma_\varepsilon \to \overline{\Gamma}_\varepsilon = \{z \in \mathbb{C}_- : \overline{z} \in \Gamma_\varepsilon\}$ and

$$f(1/z) = a_0 + a_1 z + o(z). \tag{1.3}$$

Fix $z \in \overline{\Gamma}_\varepsilon$, and let $C_r(z) = \{\lambda \in \mathbb{C}_- : |\lambda - z| = r\}$ be a circle with radius $r = |z| \sin\varepsilon/2$. It follows from (1.3) that

$$\frac{1}{2\pi i}\int_{C_r(z)} \frac{f(\lambda)\,d\lambda}{(\lambda - z)^2} = \sum_{m=0}^{1} a_m \frac{1}{2\pi i}\int_{C_r(z)} \frac{(\lambda - z_0)^m\,d\lambda}{(\lambda - z)^2} + R(z), \tag{1.4}$$

where for the remainder $R(z)$ we have

$$\begin{aligned} |R(z)| &\le r^{-1} \max_{\lambda \in C_r(z)} o(|z|) = r^{-1} \max_{\lambda \in C_r(z)} |\lambda| \cdot O(|z| + r) \\ &= \frac{|z| + r}{r} \cdot O(|z| + r) = \frac{1 + \sin\varepsilon}{\sin\varepsilon} \cdot O(|z|). \end{aligned}$$

Therefore $R(z) \to 0$ as $z \to \infty$, $z \in \overline{\Gamma}_{\varepsilon/2}$, and hence by the Cauchy theorem (1.4) implies

$$\frac{d}{dz} f(1/z) = a_1 + R(z) \to a_1, \text{ as } z \to \infty,\ z \in \overline{\Gamma}_{\varepsilon/2},$$

that implies (1.2) by substituting $1/z$ back for z. ■

CHAPTER 2

FEATURES OF THIS SHELL

2.1 Section Headings

Use the Section tag for major sections, and the Subsection tag for subsections.

2.1.1 Subsection

This is some harmless text under a subsection.

2.1.1.1 Subsubsection

This is some harmless text under a subsubsection.

Subsubsubsection This is some harmless text under a subsubsubsection.

Subsubsubsubsection This is some harmless text under a subsubsubsubsection.

2.2 Tags

You can apply the logical markup tag *Emphasized*.

You can apply the visual markup tags **Bold**, *Italics*, Roman, Sans Serif, *Slanted*, SMALL CAPS, and `Typewriter`.

Text Tags	**Mathematics Tags**	**Size Tags**
Bold	Fraktur	tiny
Italics	Blackboard Bold	scriptsize
Roman	Calligraphic	footnotesize
Sans Serif		small
Slanted		large
Small Caps		large
Typewriter		huge
		Huge

Table 2.1: Available tags

You can apply the special, mathematics only, tags $\mathfrak{fraktur}$, $\mathbb{BLACKBOARD\ BOLD}$, and $\mathcal{CALLIGRAPHIC}$. Note that blackboard bold and calligraphic are correct only when applied to uppercase letters A through Z.

You can apply the size tags tiny, scriptsize, footnotesize, small, normalsize, large, Large, LARGE, huge and Huge.

This is a Body Math paragraph. Each time you press the Enter key, Scientific WorkPlace switches to mathematics mode. This is convenient for carrying out "scratchpad" computations.

Following is a group of paragraphs marked as Body Quote. This environment is appropriate for a short quotation or a sequence of short quotations.

> The only thing we have to fear is fear itself. *Franklin D. Roosevelt,*

Mar. 4, 1933

Ask not what your country can do for you; ask what you can do for your country. *John F. Kennedy,* Jan. 20. 1961

There is nothing wrong with America that cannot be cured by what is right with America. *William J. "Bill" Clinton,* Jan. 21, 1993

2.3 List Environments

You can create numbered, bulleted, and description lists using the tag popup at the bottom left of the screen.

1. List item 1

2. List item 2

   (a) A list item under a list item.

   The typeset style for this level is different than the screen style. The screen shows a lower case alphabetic character followed by a period while the typeset style uses a lower case alphabetic character surrounded by parentheses.

   (b) Just another list item under a list item.

      i. Third level list item under a list item.

         A. Fourth and final level of list items allowed.

- Bullet item 1
- Bullet item 2
  - Second level bullet item.
    - Third level bullet item.
      - Fourth (and final) level bullet item.

Description List Each description list item has a term followed by the description of that term. Double click the term box to enter the term, or to change it.

Bunyip Mythical beast of Australian Aboriginal legends.

APPENDICES

A. THE APPENDIX

This is the appendix. Use the section division for the title of each appendix.

B. ANOTHER APPENDIX

This is another appendix.

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[TUB] *TUGboat, the Newsletter of the TEX Users Group*, TEX Users Group, c/o American Mathematical Society, P. O. Box 9506, Providence, RI, 02940.