

FORMAT FOR THESES

The Institute for Graduate Studies
in
Science and Engineering



Boğaziçi University

FORMAT FOR THESES

Institute for Graduate Studies in
Science and Engineering

A Guide for Typesetting
M.S. and Ph.D. Theses Submitted to the
Institute for Graduate Studies in
Science and Engineering

Bogaziçi University

2002

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1. INTRODUCTION

The procedures and rules set forth in the following pages are for the guidance of graduate students preparing theses at the Institute for Graduate Studies in Science and Engineering, Boğaziçi University. These materials are not intended, however, as a complete manual for the writing of theses. Much helpful information will be found in other publications, some of which are listed on Page 27. The student should consult those which are relevant to his/her field of study. As to the specific requirements, those listed herein should be followed.

Some matters of form are local and concern the weight of paper used, the title page, the table of contents, and the like. These requirements are stated in Chapters 3 and 4.

Every thesis must show correctness and clarity of expression. The responsibility for such correctness and clarity rests primarily upon the candidate, but every thesis will be scrutinized for these qualities by the student's thesis supervisor and the Examining Committee.

2. GENERAL INSTRUCTIONS

The following rules and statements are presented more as answers to questions frequently asked rather than an alphabetically indexed coverage of every contingency. If for good reason a student must seek exception to the practices listed here, he/she should consult his/her thesis supervisor.

An M.S. or Ph.D. thesis along with the appropriate number of abstracts in each case should be submitted to the candidate's thesis supervisor for review of form at least two weeks before the date set for the meeting of the Executive Committee of the Institute for selection of the thesis Examining Committee. After the approval by the thesis supervisor, copies of the thesis should be submitted to the members of the Examining Committee at least two weeks before the oral examination.

The oral examination is scheduled by the Examining Committee and the candidate's supervisor in accordance with the rules and regulations of the University. When the thesis is approved by the Examining Committee, it should be typeset and bound. The approval page of the final copy must be signed by all members of the Examining Committee. Three bound copies of the theses should be submitted to the Institute for Graduate Studies in Science and Engineering. The Institute will check the final copies of theses to assure correctness of format and consistency in bibliographic style. The Institute will deliver two of the bound copies to the Boğaziçi University Library.

The Institute of Graduate Studies in Science and Engineering requires additional (English and Turkish) copies of a short abstract, not to exceed 200 words in length. Abstracts and 5 keywords, prepared according to the format as shown on Pages 30–31, should be send by e-mail to fbe@boun.edu.tr.

Y.Ö.K. requires all candidates to fill the Y.Ö.K. Thesis Data Form, which is available at the WWW site of the Institute (<http://www.fbe.boun.edu.tr>), and submit separate copies of English abstract and Turkish “özet” as shown on this form.

3. FORMAT

3.1. Character Fonts

As a character font, use Times or Times New Roman. The font size must be 12 point in the text including formulas, equations, table headings and figure captions. At least 8 point should be used in figures, tables and super or subscripts. Footnotes, long biographical quotes and extensive quotations should be 10 points.

3.2. Spacing

Spacing of the text material shall be 1.5 or when necessary integer multiples thereof. For example, when a paragraph ends, the next one starts after pressing RETURN twice ($2 \times \text{CR}$) to get two 1.5 spacings.

The followings are exceptions:

- Footnotes — single spacing
- Long biographical quotes — single spacing
- Extensive quotations — single spacing and indented one (1) centimeter relative to the text material.

3.3. Centering

The center point of titles and headings shall be 112 mm from the left edge of the paper or 98 mm from the right edge. You can use the appropriate centering command in computer typesetting.

3.4. Margins

Margins of pages shall conform to the following specifications:

- Left margin — 3.5 cm from edge of paper
- Right margin — 2 cm from edge of paper
- Top margin — 3.5 cm from edge of paper
- Bottom margin — 2 cm from edge of paper

The above margins shall be observed on charts, graphs, tables, and drawings. Folded papers will not be accepted unless there is absolutely no other way for the material to be presented.

3.5. Pagination

Each page in the thesis (except the title page) is expected to bear a number. Only one side of the paper may be used.

The preliminary section, including the title page; copyright page, if any; foreword, preface, or acknowledgements; table of contents, etc., should be numbered, using lower case Roman Numerals, e.g., i, ii, iii, etc. The title page counts as Page i, but the number does not appear. The sequence of the preliminary section is as follows:

Title Page	Page i — number does not appear
Page of Approval	Page ii
Foreword, Preface or Acknowledgements	Page iii as necessary
Abstract	Page iv as necessary
Özet	Page v as necessary
Table of Contents	Page vi, vii as necessary
List of Figures	Page vii, viii as necessary
List of Tables	Page viii, ix as necessary
List of Symbols/Abbreviations	Page ix, x as necessary

For the remainder of the thesis, Arabic numbers are used. Each page must be numbered. Page numbers are to be placed two centimeters from the top and right hand margins on the pages and must be 12 point. Include all pages for illustrations,

tables, appendices, bibliography, etc. Use of suffixes, such as 25a, 25b, etc., will not be approved. The numbering in the main body of the thesis should begin with Page 1 and run consecutively to the last page. No punctuation, such as dash or a period, should accompany the page number.

Paragraphs must be uniformly indented one centimeter. Series of paragraph items which are to be listed without headings under any of the regular headings may, for clarity, be designated by special bullets such as •, or enumerated by (i), (ii), (iii), etc. A new paragraph must not begin at the bottom of a page if there is not sufficient space for at least (2×CR). A paragraph must be separated from the preceding and succeeding paragraphs by (2×CR).

3.6. Headings

3.6.1. Main Headings

Main headings numbered such as 1., 2., etc. must obey the following rules:

- They must begin a new page and be centered according to Section 3.3. Omit period at the end of the heading. Main headings must be typed in bold face and must be in capital letters and in 14 points.
- Main headings should reflect content of the text that follows. Main headings are not to be called as chapters.
- The number of the headings will be followed by a period and two spaces.
- They must precede the following text material or second heading by (3×CR).

3.6.2. Second Headings

Second headings numbered such as 2.1., 2.2., etc. must obey the following rules:

- They must be centered according to Section 3.3 and be typed in 12 points, bold face and, capital and lower case letters; i.e., the first letter of each word except

conjunctions, prepositions and articles must be a capital letter. Omit period at the end of heading.

- The number designation of the second heading will be followed with a period and two spaces.
- Second headings must be (2×CR) below preceding text and (2×CR) above of succeeding text, but need not begin a new page.

3.6.3. First Subheadings

First subheadings numbered such as 2.1.1., 2.1.2., etc. must obey the following rules:

- They must be typed on separate lines beginning at the left margin line of the text, but need not begin a new page.
- They must be typed in bold face and with capital and lower case letters except conjunctions, prepositions and articles.
- The number designation of the heading will be followed by a period and two spaces. Omit period at the end of the heading.
- First subheadings must be separated from the preceding and succeeding text by (2×CR).

3.6.4. Second Subheadings

Second subheadings numbered such as 2.1.1.1., 2.1.1.2., etc. must obey the following rules; however, second subheading, should be avoided if possible.

- They must be typed on the same line as the text it introduces, beginning at the left margin line of the text.
- They must be typed in capital and lower case letters except conjunctions, prepositions and articles.
- They must be followed by a period at the end of the heading and must be underlined.

- The number designation shall be followed by a period and two spaces.
- Second subheadings must be separated from the preceding text by (2×CR).

3.7. Footnotes

Footnotes should obey the following rules; however, footnotes should be used only if absolutely necessary:

- Footnote references shall be indicated in the text by an Arabic number placed superior to the text and immediately following the word, phrase or sentence which the footnote concerns.
- Footnotes shall be sequential for each page and for the entire thesis.
- Footnotes shall be placed at the bottom of the page on which they are indicated. They shall be indented from the left margin of the text by one centimeter and placed under a broken line made of 20 characters (5 cm). Footnotes shall be single-spaced and 10 points.

3.8. Bibliographical Material

As already noted in the introduction of this manual, theses should follow the form used in scholarly publications of the student's field of research. Rules of form vary from one field to another, and it is important that the student learn the editorial usages of his/her own field. It is generally important that he/she follow such usages consistently throughout his/her thesis. Only one of the following citation methods must be used throughout the thesis:

- The numerical reference of bibliographical material shall be indicated in the text by an Arabic numeral in square brackets placed in the text immediately following the name, word, phrase, or sentence which the reference concerns (in some cases, this may be the author's name). The number in square brackets such as "[8]", should indicate the order of first appearance of the reference in the text. The listing of references in the bibliography shall be in the order in which they are

used in the text and shall bear the same number as was used in the reference in the text. (See Page 25.)

- Citation of the relevant reference could also be done in the (surname of the first author, year) type. If an author has more than one reference in a calendar year, letters a, b or c should follow the year, e.g., “(Erman, 1990a), (Erman, 1990b)”. If there are two authors for the reference, both surnames should be included followed by the year, e.g., “(Erman and Ünal, 1998)”. If there are more than two authors, only the surname of the first author should be included followed by *et al.*, e.g. “(Erman *et al.*, 1997)”. The listing of references in the bibliography, in this case, shall be in alphabetical order by the surname of the first author. (See Page 26.)

3.9. Specially Designated Expressions

Specially designated expressions usually mean equations, formulae, etc. and they obey the following rules:

- They will be centered on the page according to Section 3.3 and separated from the preceding text and the succeeding text by (2×CR).
- The expressions shall be identified by an Arabic number in parentheses like “(2.1)”, “(2.2)”, “(2.3)”, etc., which should be placed opposite the expression and in line with the right margin of the text. They should be numbered within each chapter in the order of their appearance.
- Mathematical formulae and expressions must be typeset according to a consistent *math-style* throughout the whole thesis. The standard style for mathematical expressions in scientific publications makes use of italic typeface for variables in Latin characters and non-italic typeface for mathematical signs (+, −, parentheses, etc.). Bold characters are usually reserved for vectors and matrices. In any case, the style used for in-text formulae should be the same as that of displayed formulae.

3.10. Tables and Figures

In general, all of these are special matters, usually of a technical sort, and the proper form must be understood and followed after a candidate has received instructions from his/her theses supervisor (See Page 28 for examples). To ensure satisfactory reproduction, drawings, graphs, etc., they should be prepared in contrasting colors, preferably in black.

Tables and figures should be enumerated within each chapter, i.e., as 2.1, 2.2, 2.3, 3.1, 3.2, etc. The designation of each table or figure within the text should have only the first letter in capital (i.e, such as “Table 4.5” or “Figure 3.8”) throughout the thesis (See Pages 22, 23 and 28). Tables, figures and their captions should be centered as shown in the examples on Page 28. The captions should be as normal text, i.e, only the first letter should be capitalized. The captions should be at a distance of (1×CR) from the table or figure. Also note that all floating items such as graphs, charts, photographs and illustrations should be considered and designated as a figure or table, whichever is appropriate.

4. ARRANGEMENT

4.1. Title Page

When preparing the Title Page, the candidate must list his/her prior degree(s) showing the major, the degree granting institutions and dates in chronological order. This page does not bear a page number. Examples of Title Page for an M.S. and a Ph.D. thesis are presented on Pages 17 and 18, respectively. Follow the examples carefully as to form and spacing. At the bottom of the example page where year is shown, write the semester date (year only, viz. 2001) in which the requirements for the degree were completed.

4.2. Approval Page

All copies of the thesis submitted must include original signatures of the Examining Committee on the approval page. It should be prepared in accordance with the sample in Page 19 and should follow the title page. The names of the members of the Examining Committee will be listed one below the other in alphabetical order except the Thesis Supervisor's, whose name will be at the top of the list. Beside each name, space for the signature of each examiner should be left. The date at the bottom of the page is the date the thesis was approved by the Examining Committee.

4.3. Dedication

Occasionally, authors would like to dedicate their thesis to their family members, friends or some scientists in their area of research. The dedication page should follow right after the Approval Page.

4.4. Acknowledgements

The candidate may desire to include a page with a brief note of an acknowledgement of help received from particular people. All organizations proving financial support must also be acknowledged, with project identifications like grant number, etc.

4.5. Abstract

The abstract should give the information that will enable a scholar to tell whether he/she wishes to read the complete work. Therefore, the abstract should cover the following points: Statement of the problem, procedure or method, results, conclusions. Two abstracts, one in English and the other in Turkish, should be included. The abstract should contain no headings, tabular material, chemical formulas, or footnotes. Abstracts should not contain references, but author citing is allowed.

The abstract page should contain the title of the thesis. The Turkish abstract (“Özet”) must follow the English abstract in the same format. An example of an abstract to be included in the thesis is given on Page 20. Examples of abstract pages to be submitted separately for M.S. and Ph.D. degrees are presented on Pages 30 and 31.

4.6. Table of Contents, List of Figures, Tables and Symbols/Abbreviations

Theses are expected to have a “Table of Contents” for the convenience of the reader. If figures and tables are scattered throughout the text, a separate “List of Figures” (and/or “List of Tables”) must be included after the Table of Contents. These lists should include page numbers. Similarly, a “List of Symbols” (or “List of Symbols/Abbreviations”, as appropriate) should be included. Examples of such materials are shown on Pages 22–24. “List of Symbols/Abbreviations” can contain abbreviations listed alphabetically as a separate group following the symbols.

4.7. Text

The text of the thesis will follow at this point. The first chapter (in most cases, Introduction) will start on the first page of the text, i.e. the first page enumerated in Arabic numerals. When writing your thesis, pay attention to some of the precautions listed below:

- The whole text should be left and right justified.
- Please note the spelling of “Foreword”.
- Periods, commas, semicolons and colons go outside the quotation marks.
- The word “data” is plural and requires a plural verb.
- Integers from one to nine, inclusive, should be spelled out except when they represent a chapter or a section; for number 10 and above, use numerals. Numbers should be spelled out when they begin a sentence.
- Spell out per cent; do not use %, and write per cent as two words without a period within the text.

4.8. Appendices

A last section may contain supporting data for the text in the form of one or more appendices. Examples of appendix material include data sheets, questionnaire samples, flowcharts, illustrations, maps, software listings, charts, etc. If the appended data should include oversize illustrations or maps, several alternative methods of inclusions are available.

If a section, table, figure, equation etc., is to be included in an appendix, the numbering should follow the same rules used within the thesis. In this case, however, they should begin with the letter of the respective appendix such as “Table A.1”, “Equation (B.4)” etc. Each appendix should have a descriptive title just like chapter headings (See Page 32).

The developed computer program should be given in a separate diskette or CD.

The format and contents of this diskette or CD is explained in Appendix B of this booklet.

5. PREPARATION OF THE FINAL COPIES

5.1. Typesetting

Computer typesetting programs such as \TeX or \LaTeX are highly recommended. Theses written in MS-WORD for Windows (Version 6.0 or later) are also acceptable.

5.2. Paper Quality

The original copy shall be typed on 75 or 80 gr/m² A4-size white paper. All reproduced copies should be of the same grade of paper.

5.3. Printer

Only laser printer and Ink Jet printer output are acceptable. Printer settings must comply with A4-size paper and must be so that the page is not resized in printing.

5.4. Reproduction

Mimeographed or ditto copies are not acceptable for the Institute or Library copies; however, photocopy reproduction is acceptable for all parts or copies of the thesis. Care must be taken to insure that the proper grade of paper is used at all times and that copying contrast is dark.

5.5. Binding

The thesis should be bound in dark blue hard cover. The final bound size of the thesis should conform to A4 size. The name and surname of the candidate, the type of degree obtained and the year should be printed in the above order on the spine of the cover. When the thesis is placed front cover up, the spine should read from left to right. The format of the front cover is depicted on Page 29.

6. PUBLICATION OF THESES

6.1. Use of Copyrighted Material

Writers of theses must assume full responsibility for use of any copyrighted material in their manuscripts. Written permission of the copyright owner must be obtained when extensive use is contemplated.

Permission to quote extensively from copyrighted material should be obtained by the candidate from the author or the publisher, whichever holds the copyright. Customarily, authorization is granted on the condition that proper acknowledgement is made. In some instances, however, copyright granting permission to include such material should be kept on file by the candidate for later reference in case questions arise.

6.2. Publications

Theses, or extracts from them, may be published only upon release for publication by the major supervisor and provided proper credit is given to Boğaziçi University. No thesis may be published as such before it has been approved by the major supervisor. All theses and separately submitted abstracts are the property of the University.

As many theses will be important to other scholars and to a more general body of readers, candidates for degrees should plan, if possible, for publication of their work.

APPENDIX A: SAMPLE PAGES

The following pages (17–31) present examples of some thesis pages typeset in the format described in the preceeding chapters. They include the pages to be found in the preamble of a thesis (such as title and approval pages, table of contents, etc.), as well as examples of list of references and the abstract to be submitted separately to the Institute. Also the format of the cover for the bound copy is shown. Further, this booklet (except its title page) is typeset in the format required for the theses.

The sample pages for reference lists (Pages 25–26) include examples of referencing journal articles, books, articles in a book, theses, conference papers, reports, and articles in the Internet.

Follow the examples in the following pages carefully as far as the form, font type and size, and spacing is concerned. You can consult the Institute Secretariat for questions you might have.

TITLE OF THESIS IN CAPITAL LETTERS

by

Candidate's Full Name

B.S., Industrial Engineering, Boğaziçi University, 2000

Submitted to the Institute for Graduate Studies in
Science and Engineering in partial fulfillment of
the requirements for the degree of
Master of Science

Graduate Program in Industrial Engineering

Boğaziçi University

2003

NUMERICAL VERIFICATION OF PLANE PARALLEL TURBULENT SHEAR
FLOW MODELS WITH SIMILARITY TRANSFORMATIONS

by

Ümit Sönmezler

B.S., Mechanical Engineering, Boğaziçi University, 1988

M.S., Mechanical Engineering, Boğaziçi University, 1991

Submitted to the Institute for Graduate Studies in
Science and Engineering in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

Graduate Program in Mechanical Engineering
Boğaziçi University

2003

TiO₂ SEMICONDUCTOR PHOTODEGRADATION OF SUBSTITUTED
RESORCINOLS: KINETIC AND MECHANISTIC STUDIES

APPROVED BY:

Prof. Yüksel İnel

(Thesis Supervisor)

Assoc. Prof. Zeynep Atay

Prof. Dilek Çalgan

DATE OF APPROVAL: Day.Month.Year

ABSTRACT

DEVELOPMENT OF A FRAME RELAY COMMUNICATION INTERFACE

Frame relay is a connection oriented packet switching technique and is intended for the interconnection of geographically separated local area networks. Frame relay communication has been proposed to improve the performance of ISDN packet transmission, but later it has been found out that it alone could be used as a cost effective communication technique. The work done in this M.S. thesis is part of a joint effort to develop a high speed network test bed that involves a frame relay switch, frame relay terminals and frame relay routers in the Computer Networks Research Laboratory. The frame relay line speed of the test bed has been selected as 2048 Kbps. IBM compatible personal computer's (PC's) with ISA bus have been selected as frame relay terminals and routers, since they have low cost and it is relatively easier to solve their interfacing problems. A Motorola VME bus based multiprocessor computer system has been selected as the main component of the frame relay switch. The development of the frame relay ISA bus interface and the development of frame switch interface are the subjects of this M.S. thesis. Both interfaces have many common functions, subsystems and components. The frame relay PC ISA bus interface has been fully designed, realized as a board and tested for operation. The frame relay switch interface has been designed based on the experiences accumulated while developing the frame relay PC ISA bus interface.

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LIST OF SYMBOLS/ABBREVIATIONS

A	System matrix
B	Input matrix
<i>E</i>	Three-dimensional Euclidean space
G	Plant transfer matrix
G₁	Plant disturbance matrix
<i>R</i>	A closed and bounded region in <i>E</i>
∂R	Boundary of the region <i>R</i>
$\partial R^s, s = 1, \dots, p$	Complementary regular subsurface of the boundary ∂R , <i>s</i> being a positive scalar
<i>T</i>	Sampling time
<i>u</i>	Control Input
x_c	Controller state vector
α_c, α_e	Controller and estimator characteristics polynomials
Γ	Discrete plant control input matrix
Γ₁	Discrete plant noise input matrix
λ	Plant delay time or transportation lag
Φ	Discrete plant system matrix
τ	Optical distance
τ_0	Optical thickness or optical half thickness
ADD	Average detection delay
ASN	Average sample number
i.i.d.	independently and identically distributed
JACS	Journal of American Chemical Society
MSE	Mean Square Error
SPRT	Sequential probability ratio test

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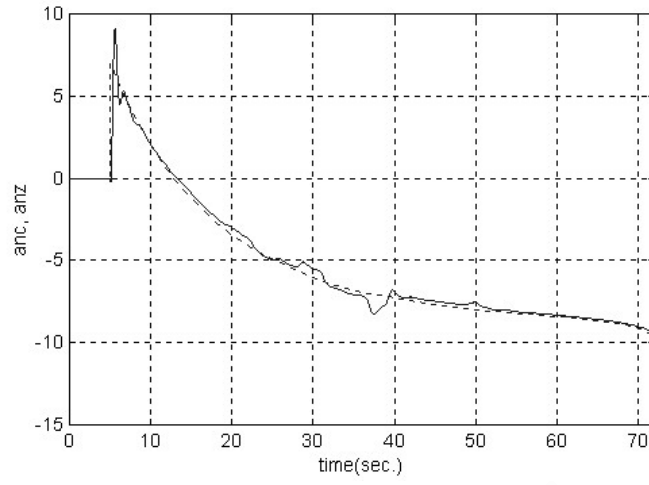


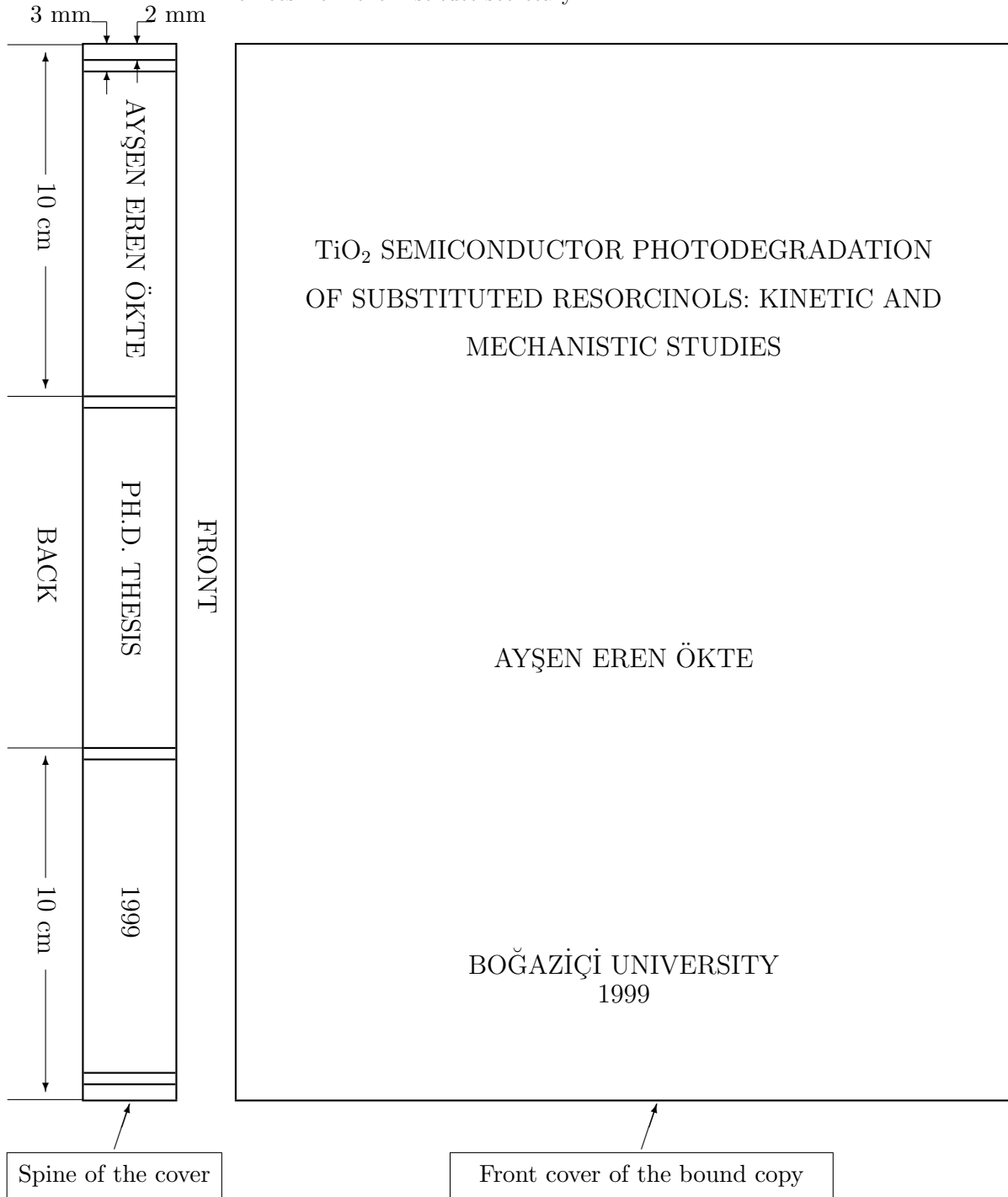
Figure 2.3. The command (dotted line) and the output (solid line) acceleration of the missile

Table 2.2. Delayed neutron constants

Mean life (sec)	Decay Constant (λ_i , sec^{-1})	Fraction
80.4	0.0124	0.00021
32.8	0.0305	0.00140
8.98	0.111	0.00125
3.32	0.301	0.00253
0.88	1.14	0.00074
0.332	3.01	0.00027

(Format of Thesis Cover)

The cover should be deep blue and the texture should have smallgrains. Binding should use stitches; stapled binding is not acceptable. To avoid rejections use the services of a high quality binding office. You can get list of approved binding offices from the Institute secretary.



NEURAL NETWORK TOPOLOGY OPTIMIZATION WITH GENETIC ALGORITHMS USING INDIRECT ENCODING

Erkan Bulut

Computer Engineering, M.S. Thesis, 2001

Thesis Supervisor: Assoc. Prof. H. Levent Akin

Keywords: Neural Networks, backpropagation algorithm, unit-cluster model, genetic algorithms, indirect encoding (at most five keywords to be selected from Citation Index)

Neural Networks can be trained with learning algorithms once their topology is known. The size and the complexity greatly influence its performance. Since the topology of the neural networks is problem-dependent it is not easy to construct the optimal neural network.

The genetic systems presented in this study is an approach to solve this problem automatically. The genetic algorithm and the unit-cluster model are the two main part of this genetic system. The structure of the neural network is represented by the unit-cluster model. Suitable genetic algorithm operators are applied on them. The success of the implemented genetic system is tested on the binary and real valued problem sets.

ANALYSIS OF FOLDING KINETICS FOR SIMPLIFIED MODEL PROTEINS

Şefika Banu Özkan

Chemical Engineering, Ph.D. Thesis, 2001

Thesis Supervisor: Prof. İvet Bahar

Keywords: Folding, unfolding, transition state, Φ -value analysis, folding kinetics

The conformal stochastics of simplified model chains that show an apparent two-state kinetics was explored. A fundamental question addressed in the present analysis is to understand if the folding takes place through a continuum of paths, or if a preferred pathway involving subcooperative folding events can be discerned. To this aim, the complete sets of conformations for short model chains were generated as self-avoiding walks on a square lattice. Native like contacts have been assigned attractive potentials, and transition rates have been assigned on the basis of native-like contacts and root-mean-square deviations between conformations. The time evolution of all conformational transitions has been analyzed starting from a uniform distribution of conformations, using a master equation formalism. A key conclusion is that: (i) The lack of intermediates that define two-state kinetics does not preclude folding through a specific sequence of events. (ii) Φ -value analysis, a measure of the stability and change in folding kinetics due to mutation reveals that nonclassical Φ -values can arise from parallel microscopic flow channel, causing an overflow into a faster flow channel. Φ -values greater than one occur when mutations redirect a fast flow into a slower channel.

APPENDIX B: FORMAT OF DISKETTES/CD CONTAINING COMPUTER SOFTWARE

Listings of software should be given in a diskette/CD as specified by the Institute. The diskette/CD should contain files containing the source code, one or more sample input and corresponding output separately. Other than these, there must be another file named "READ.ME".

In this ASCII text file, the following sections must appear:

- Files in the Disk: In this section, the names of the files together with their contents must be listed.
- Hardware Requirements: In this section, the equipment, graphics card, mouse, disk capacity, RAM capacity etc. necessary to run the software must be noted.
- Software Requirements: In this section, the operating system, the compiler, linker, and the libraries etc. necessary to compile and link the software must be listed. Please note that no copyrighted material file (compiler, library etc.) should be put on the disk without obtaining the necessary license from the copyright owner.