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INSTITUTO DE BIOTECNOLOGÍA
PROGRAMA DE GENÓMICA COMPUTACIONAL

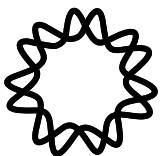
DOES RABBITS PREDATE WOLVES? THE BERLIN
HYPOTHESIS

T E S I S

QUE PARA OBTENER EL GRADO DE:
DOCTOR EN CIENCIAS

PRESENTA:
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Does rabbits predate wolves? The Berlin hypothesis

por

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*A pesar de la distancia y del
tiempo ido, sólo puedo dedicar:*

A todos y ninguno...

JULIO A. FREYRE-GONZÁLEZ

Agradecimientos

Gracias a cada una de las personas que me apoyaron e hicieron que este sueño se cristalizara en una hermosa realidad.

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Prólogo

Redacte aquí el prólogo contando la historia detrás de su trabajo.

Does rabbits predate wolves? The Berlin hypothesis

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Resumen

Aquí se redacta el resumen en español.

Does rabbits predate wolves? The Berlin hypothesis

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Abstract

Here goes the english abstract.

Parte I

The First Part

Capítulo 1

About this Style

This document provides a sample of the UNAMThesis package. This style provides a customizable format to typeset thesis (grad and undergrad) according to the Universidad Nacional Autónoma de México guidelines. This style is provided with support to be used in Scientific Workplace (SWP) 3.x [Barabási, 2002; Freyre-González *et al.*, 2008, 2005].

The front matter has a number of sample entries that you should replace with your own [Gottesman, 1984; Griffith *et al.*, 2002; Hartwell *et al.*, 1999].

1.1. Package usage

Escudo-UNAM and Escudo-IBT must reside in your main document directory. The style looks for these files to draw the logos on the cover page. You may customize the logos using the `\logounam{path_file}` and `\logoinstitute{path_file}` commands in the preamble to define the files location and name.

The `\university{university name}` command allows you to customize the university name, which defaults to 'Universidad Nacional Autónoma de México'.

In addition, `\institute{institute name}`, `\rcenter{research center name}`, `\faculty{faculty name}`, or `\school{school name}` commands allow to set the institution name where you carried out your studies. The rationale for use different commands is to autoselect the correct gender for the definite article. However, these are optional commands, so in case you omit the institution name, the gender of the definite article in the title page is set by default to fe-

male ('la') to match with the gender of the word 'universidad'. You could customize it using `\@instituteartm` to set to male the definite article ('el') or `\@instituteartf` to set it to female ('la'). The `\department{department or program name}` command is optional.

The style implements environments for dedication, acknowledgements, foreword, resúmen and abstract. Besides, there are command versions for all these environments (except abstract) named: `\makededication{...}`, `\makeacknowledgements{...}`, `\makeforeword{...}` and `\makeresumen{...}`. These command versions are useful to interface with SWP due to some bizarre restrictions; so, if you are using standard LaTeX (without SWP) please use the environments.

In addition, this style implements the `quotenat` environment (`\begin{quotenat} ... \end{quotenat}`) for opening quotes (quotations commonly used at the beginning of a chapter).

The UNAMThesis bibliographic style enables the use of author-year schemes using the `natbib` package. Citation to e-print archives (e.g., arXiv) is possible using the `eprint` BibTeX field [Keseler *et al.*, 2005; Leskovec y Horvitz, 2008; Lipschutz, 1986; Marconi, 1967; Neidhardt y Savageau, 1996; Nelson y Cox, 2000].

Capítulo 2

Features of this Style

*I worry that, especially as the Millennium edges nearer,
pseudo-science and superstition will seem year by year more tempting,
the siren song of unreason more sonorous and attractive.*
— CARL SAGAN, *The Demon-Haunted World* (1995)

2.1. Section

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

2.1.1. Subsection

This is just some harmless text under a subsection.

Subsubsection

This is just some harmless text under a subsubsection.

Subsubsubsection This is just some harmless text under a subsubsubsection.

Subsubsubsubsection This is just 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.

You can apply the special, mathematics only, tags **BLACKBOARD BOLD**, *CALLIGRAPHIC*, and **fraktur**. 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 buck stops here. *Harry Truman*

Ask not what your country can do for you; ask what you can do for your country.

John F Kennedy

I am not a crook. *Richard Nixon*

It's no exaggeration to say the undecideds could go one way or another. *George*

Bush

I did not have sexual relations with that woman, Miss Lewinsky. *Bill Clinton*

The Quotation tag is used for quotations of more than one paragraph. Following is the beginning of *Alice's Adventures in Wonderland* by Lewis Carroll:

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversation?'

So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

There was nothing so very remarkable in that; nor did Alice think it so very much out of the way to hear the Rabbit say to itself, 'Oh dear! Oh dear! I shall be late!' (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but when the Rabbit actually took a watch out of its waistcoat-pocket, and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and burning with curiosity, she ran across the field after it, and fortunately was just in time to see it pop down a large rabbit-hole under the hedge.

In another moment down went Alice after it, never once considering how in the world she was to get out again.

Use the Verbatim tag when you want L^AT_EX to preserve spacing, perhaps when including a fragment from a program such as:

```
#include <iostream>          // < > is used for standard libraries.
void main(void)              // ''main'' method always called first.
{
    cout << ''Hello World.''; // Send to output stream.
}
```

2.3. Mathematics and Text

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 $n \rightarrow \infty$, $a_{n,k} \rightarrow 0$ for each k , and $\gamma_n = \sum_{k=0}^{\infty} (a_{n,k+1} - a_{n,k})^+ \rightarrow 0$. 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 .

The numbered equation

$$u_{tt} - \Delta u + u^5 + u|u|^{p-2} = 0 \text{ in } \mathbf{R}^3 \times [0, \infty[. \quad (2-1)$$

is automatically numbered as equation 2-1.

2.4. Lists 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.

1) 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.

2.5. Theorem-Like Environments

The following theorem-like environments (in alphabetical order) are available in this style.

Acknowledgement 1 *This is an acknowledgement*

Algorithm 2 *This is an algorithm*

Axiom 3 *This is an axiom*

Case 4 *This is a case*

Claim 5 *This is a claim*

Conclusion 6 *This is a conclusion*

Condition 7 *This is a condition*

Conjecture 8 *This is a conjecture*

Corollary 9 *This is a corollary*

Criterion 10 *This is a criterion*

Definition 11 *This is a definition*

Example 12 *This is an example*

Exercise 13 *This is an exercise*

Lemma 14 *This is a lemma*

Proof. This is the proof of the lemma. ■

Notation 15 *This is notation*

Problem 16 *This is a problem*

Proposition 17 *This is a proposition*

Remark 18 *This is a remark*

Solution 19 *This is a solution*

Summary 20 *This is a summary*

Theorem 21 *This is a theorem*

Proof of the Main Theorem. This is the proof. ■

Apéndice A

The First Appendix

The appendix fragment is used only once. Subsequent appendices can be created using the Chapter Section/Body Tag.

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