

RNA STRUCTURE ANALYSIS USING THE RIGID BLOCK MODEL

BY MAURICIO ESGUERRA

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Dr. Wilma K. Olson Group
Rutgers, The State University of New Jersey**

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ABSTRACT OF THE DISSERTATION

RNA Structure Analysis Using the Rigid Block Model

by Mauricio Esguerra

Dissertation Director: Wilma K. Olson

RNA structure is in the forefront of our understanding of the beginning of life, also the mechanisms in life regulation. The life regulation part is new, not ten years old. Primordial in understanding the cell. The practical purpose for the chemist is to understand how RNA folds. It's mainly a mechanical problem, therefore it's not foreing to use statistical mechanics methods, combined with detailed knowledge of atomic level structure.

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As a thing among things, each thing is equally insignificant; as a world each one equally significant.

If I have been contemplating the stove, and then am told; but now all you know is the stove, my result does indeed sound trivial. For this represents the matter as if I had studied the stove as one among the many, many things in the world. But if I was contemplating the stove, it was my world, and everything else colorless by contrast with it ...

For it is equally possible to take the bare present image as the worthless momentary picture in the whole temporal world, and as the true world among shadows.

Ludwig Wittgenstein

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Chapter 1

Introduction

This is the introductory chapter.

Chapter 2

RNA Base Steps

This chapter deals with how starting from a backbone based view of RNA, we can make an interpretation at the step level using the block model.

Chapter 3

RNA Base-Pairing

The RNA base-pair is reviewed again.

3.1 Canonical and Non. Methods Paper

3.2 Clustering of Yurong's classification

Chapter 4

RNA Base Pair Steps

4.1 Analysis and Django Webserver

4.2 Persistence Length

4.3 AMBER: Persistence Length of Base-Pair Step Patterns

Chapter 5

RNA Motifs

This is the introductory chapter.

Chapter 6

Introduction

This is the introductory chapter.