

Alice in Stretch & SqueezeLand: 2 Some Experiments

August 12, 2012

Chapter Abstract

Alice in
Stretch &
SqueezeLand:
2 Some
Experiments

Chapter
Summary-01

Experimental-
01

Experimental-
02

Experimental-
03

Experimental-
04

Experimental-
05

Experimental-
06a

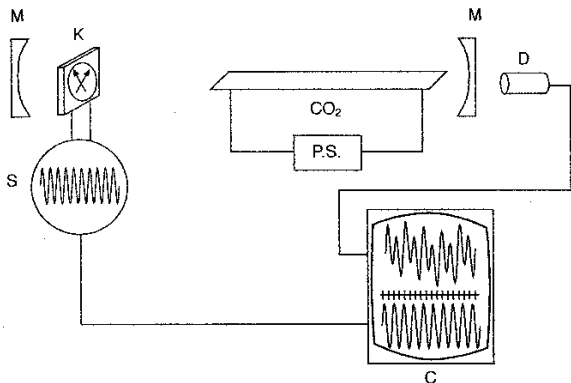
Experimental-
06b

Experimental-

Several early experiments are described with a view to seeing the features that have been important in the development of topological analysis techniques.

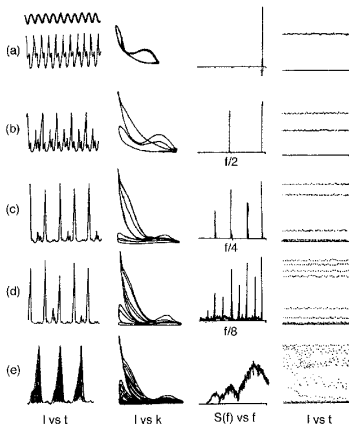
Experimental Schematic

Laser Experimental Arrangement



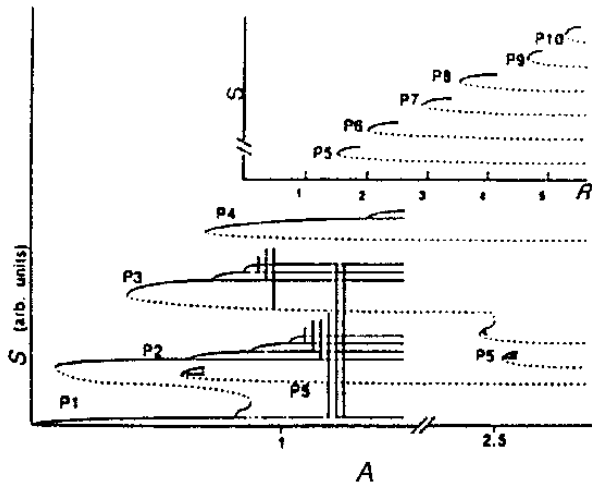
Experimental Motivation

Oscilloscope Traces



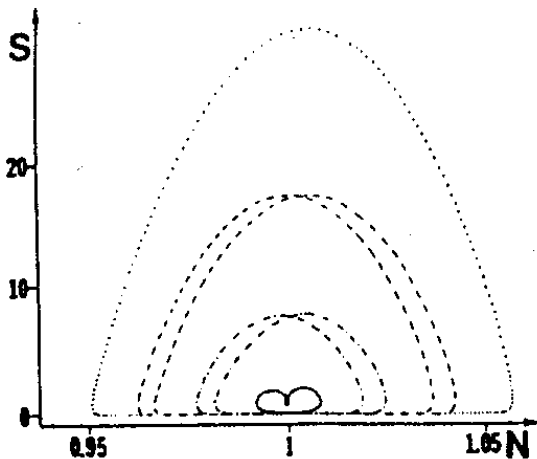
Results, Single Experiment

Bifurcation Schematics



Some Attractors

Coexisting Basins of Attraction



Many Experiments

Bifurcation Perestroikas

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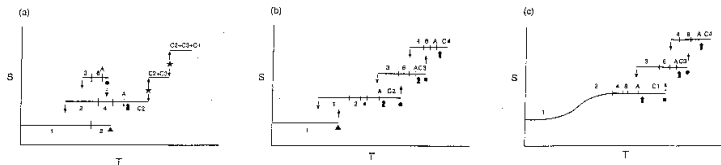
Experimental-
04

Experimental-
05

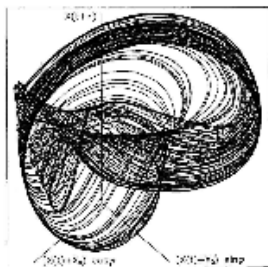
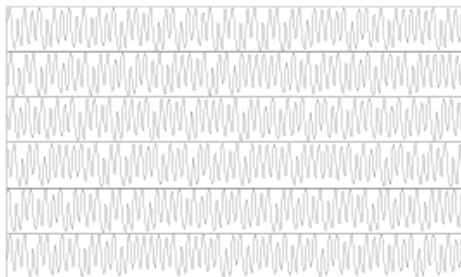
Experimental-
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Experimental-

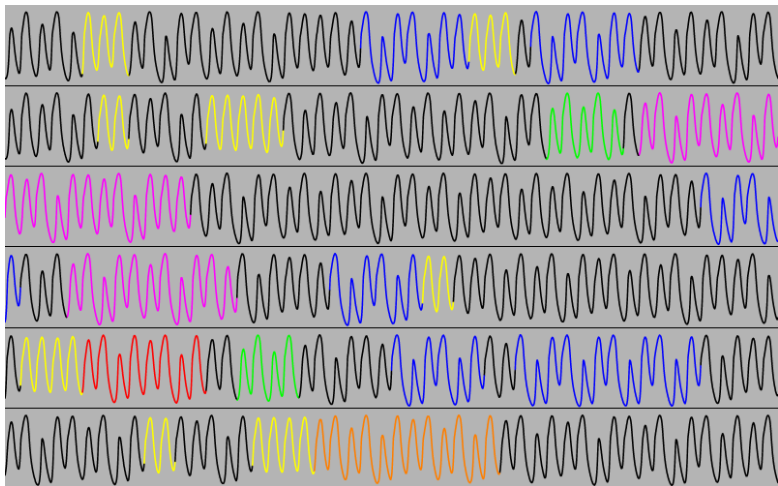


Experimental Data: LML

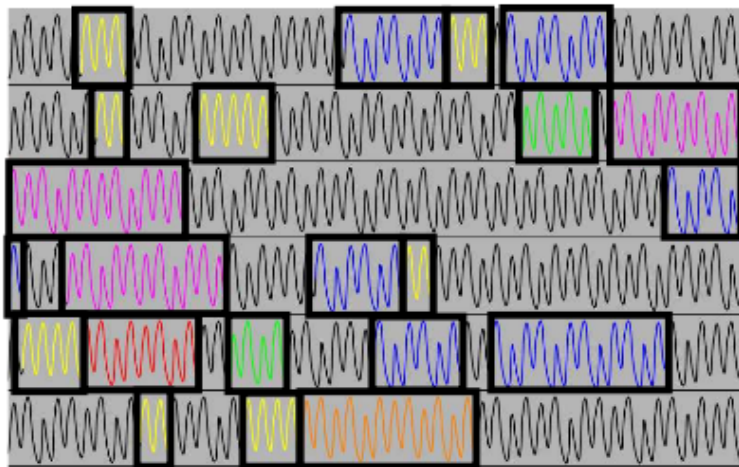


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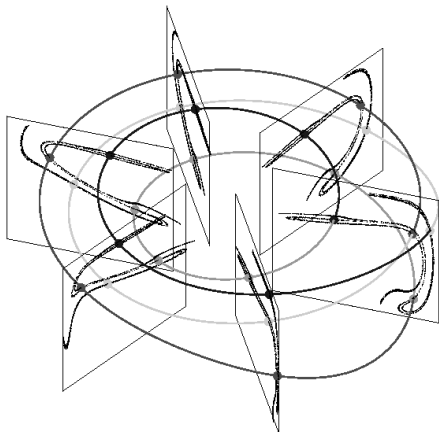
Experimental Data: LML



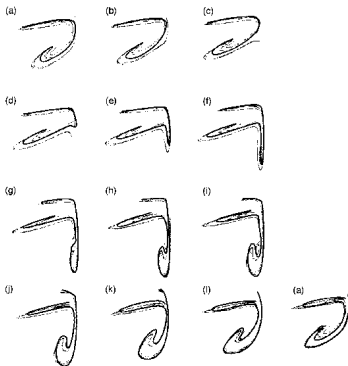
Experimental Data: LML



Stretching & Squeezing in a Torus



Rotating the Poincaré Section around the axis of the torus



Rotating the Poincaré Section around the axis of the torus

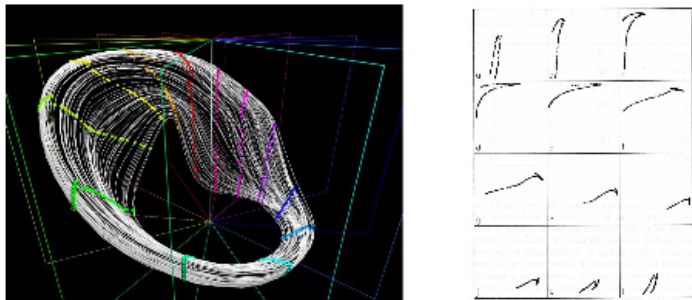
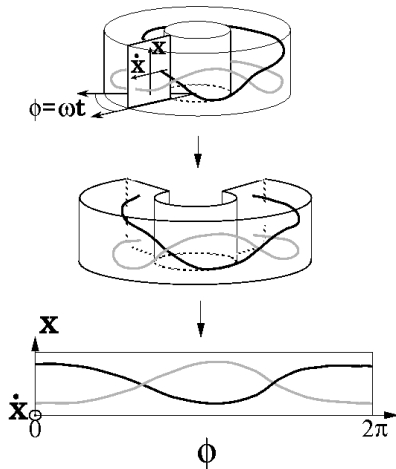


Figure 2. Left: Intersections of a chaotic attractor with a series of section planes are computed. Right: Their evolution from plane to plane shows the interplay of the stretching and squeezing mechanisms.

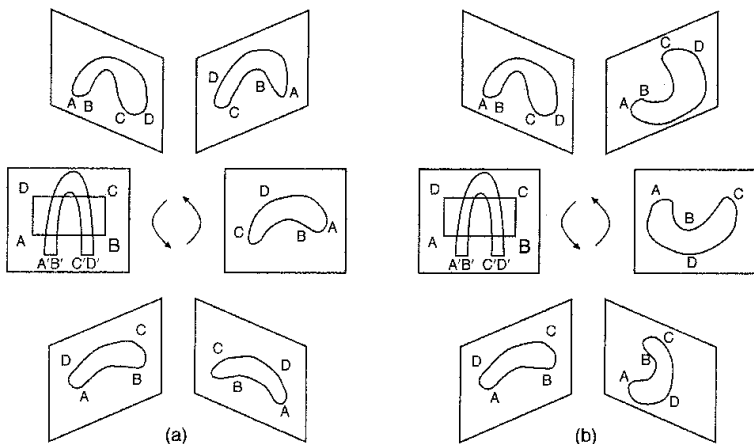
Another Visualization

Cutting Open a Torus



Satisfying Boundary Conditions

Global Torsion



A Chemical Experiment

The Belousov-Zhabotinskii Reaction

