Exercise 10 – the Lorentz model

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# 1.Abstract

In this report, the Lorentz model is applied to grasp a basic understanding of fluid mechanics, especially Rayleigh-Benard problem. Besides, phase-space plot, Poincare section are investigated.

# 2.Background

Lorentz was studying the basic equations of fluid mechanics, which are known as the Navier-Stokes equations and which can be regarded as Newton’s law written in a form appropriate to a fluid. The specific situation he considered was the Rayleigh-Benard problem, which concerns a fluide in a container whose top and bottom surfaces are held at different temperatures. Indeed, he grossly simplified the problem as he reached to the so-called Lorentz equations, or equivalently, the Lorentz model.

# 3.Methodology and Solution

The Lorentz equations (the Lorentz model)

# 4.Code

# 5.Running and Analysis

# 6.Acknowledgemen and Reference

- type the formulas with [codecogs](http://latex.codecogs.com/)