

Seminari Informal de Matemàtiques de Barcelona

Speaker: Rafael Martínez Vergara.

University: Universitat de Barcelona.

Date: Wednesday, November 6th, 2024.

Schedule: 12:30 talk.

Place: UB (FMI aula B1) and Zoom.

Language: English.

Title: Strange non-chaotic attractors in quasiperiodically forced maps.

Abstract: This talk offers an introduction to the theory of strange non-chaotic attractors in dynamical systems, with a focus on their significance as invariant sets that appear in a wide variety of models across physics, biology, and engineering. Strange attractors are key to understanding complex and non-chaotic behavior in systems driven by non-linear dynamics. In this presentation, we will delve into the properties and behavior of quasiperiodically forced maps of the form $F_{a,b,\omega}(x, \theta)$, where x is real, θ is an angle, and ω is an irrational frequency that drives quasiperiodic motion. The family of maps depends on two positive real parameters, a and b , which shape the system's response to external forcing. We will highlight the role of these parameters in governing the transition to a strange attractor and provide an overview of current results in the study of such systems. By examining specific examples, the talk will illustrate how strange attractors emerge and behave under quasiperiodic forcing.

About us: *SIMBa* is a mathematics seminar organized by graduate students in the Barcelona area. It is aimed towards graduate and last-year undergraduate students. Our goals are disseminating knowledge from different branches of mathematics for those interested and promoting networking between the attendants.

This seminar is backed by the Faculty of Mathematics and Computer Science at Universitat de Barcelona, Faculty of Mathematics and Statistics at Universitat Politècnica de Catalunya, the Department of Mathematics at Universitat Autònoma de Barcelona, CRM, IMUB and BGSMath.

For more information, visit seminari-simba.github.io/en. You may contact us by sending an email to seminari.simba@gmail.com.