

The logo for SIMBa, featuring the text "SIMBa" in a bold, black, serif font on a solid orange rectangular background.

**BGSMath**  
BARCELONA GRADUATE  
SCHOOL OF MATHEMATICS

# Seminari Informal de Matemàtiques de Barcelona

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**Speaker:** Salvador Borrós Cullell.

**University:** Universitat Autònoma de Barcelona.

**Date:** Wednesday, March 16th, 2022.

**Schedule:** 12:00, *virtual coffee break*; 12:20, talk.

**Place:** Zoom (the link will be posted on our website).

**Language:** English.

**Title:** Numerical Computation of Invariant Objects Using Daubechies Wavelets

**Abstract:** We present a method to compute the truncated wavelet expansion of an invariant object in a quasi-periodic skew product using periodic Daubechies Wavelets. To obtain the wavelet coefficients, we need to solve the invariance equations of the system in a mesh of points, desirably as dense as possible. This requires quite a bit of numerical finesse, since Daubechies Wavelets do not have closed expressions. Once we have obtained the truncated wavelet expansion of the invariant object, we can compute its Besov regularity of said invariant objects. In particular, we will compute the regularity of Strange Non-Chaotic Attractors stemming from a Keller-GOPY biparametric family of systems as a proof of concept.

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**About us:** *SIMBa* is a youth mathematics seminar organized by graduate students in the Barcelona area. It is aimed towards graduate and last course undergraduate students. Our goals are divulging the knowledge from different branches of mathematics for those interested and promote 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 from Univesitat Autònoma de Barcelona, CRM, IMUB and BGSMath.

Fore more information, visit at [www.ub.edu/simba/en/](http://www.ub.edu/simba/en/).

If you have any doubt or comment do not hesitate to contact us by sending an email to [seminari.simba@gmail.com](mailto:seminari.simba@gmail.com).