

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

# Seminari Informal de Matemàtiques de Barcelona

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**Speaker:** Óscar Rivero Salgado.

**University:** Universitat Politècnica de Catalunya.

**Date:** Wednesday, November 4th, 2020.

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

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

**Language:** English.

**Title:** A walk through the Birch and Swinnerton-Dyer conjecture

**Abstract:** The Birch and Swinnerton-Dyer conjecture is one of the seven millennium problems posed by the Clay Mathematics Institute. There have been many different approaches along the last decades, but it still remains open. The conjecture relates the rank of an elliptic curve with the order of vanishing of a complex  $L$ -function, and it has been proved when the latter is at most one. At this point, there is a natural question posed by Mazur, Tate and Teitelbaum during the eighties: why do we look at the complex  $L$ -function? What about the  $L$ -functions attached to other non-archimedean completions of the rational numbers? This question will move us to the  $p$ -adic world, where new phenomena appear, leading us to suggestive points of view about the conjecture.

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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.

For 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).