

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

BGSMath
BARCELONA GRADUATE
SCHOOL OF MATHEMATICS

Seminari Informal de Matemàtiques de Barcelona

Speaker: Carlos Caralps Rueda.

University: Universitat Autònoma de Barcelona.

Date: Wednesday, February 16th, 2022.

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

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

Language: English.

Title: From far-out mystery to a useful tool

Abstract: This talk aims to redefine topological filters in order to obtain a helpful tool that can be used to prove some propositions in topology using semiring theory. In this talk, we will see the first definition of filters provided by Henri Cartan, which is used to define limits in general topological spaces, and we will state some famous theorems about filters and topology. Changing the definition slightly allows us to prove some propositions by using group theory identities, we will show this by solving some topology-undergraduate problems as trivial algebraic identities.

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/.

If you have any doubt or comment do not hesitate to contact us by sending an email to seminari.simba@gmail.com.