

# Seminari Informal de Matemàtiques de Barcelona

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**Speaker:** Dan Alexandru Paraschiv.  
**University:** Universitat de Barcelona.

**Date:** Wednesday, 10th of April.  
**Schedule:** 12:00, *coffee break*; 12:20, talk.  
**Place:** B1 classroom, *Facultat de Matemàtiques* of UB.  
**Language:** English.

**Title:** Studying the Fatou set for a generalization of Milnor's family of cubic maps.

**Abstract:** The first attempts of studying iteration of holomorphic functions were successfully realized by Julia and Fatou in the 1920s. However, due to technological limitations, having a good intuition of the arising fractal-like patterns was very difficult, and the problem started being studied again in the 1980s by Mandelbrot, starting with the quadratic family  $P_c = z^2 + c$ , where  $c \in \mathbb{C}$ . Nowadays, among rational maps on the Riemann sphere, a heightened interest in perturbation maps exist. We'll summarily introduce 3 families of maps (2 with perturbations, one of polynomials of degree 3) which are helpful in understanding our work. We will conclude with some results obtained by us for a specific case of perturbation of bicritical hyperbolic polynomials ( $D_\lambda = z^{n+1} - az^n + \frac{\lambda}{z^d}$  for fixed  $a$  belonging to a specific hyperbolic component of the parameter plane of  $M_a = z^{n+1} - az^n$ ,  $\lambda$  small enough and  $n, d$  natural numbers such that  $\frac{1}{n} + \frac{1}{d} < 1$ ).

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**About us:** The SIMBa is a young seminar organized by the PhD students of the Faculties of Mathematics and Computers of Barcelona. It is aimed at doctoral, master's degree students and, also, for those who are in the last grade courses. Our goal is that each one can make known the research which they are doing, as well as, to get new knowledge of other areas of mathematics other than his own..

More information 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 the email address ***seminari.simba@ub.edu***.