

# Colloquium di Matematica

LAURA DE MARCO (HARVARD)



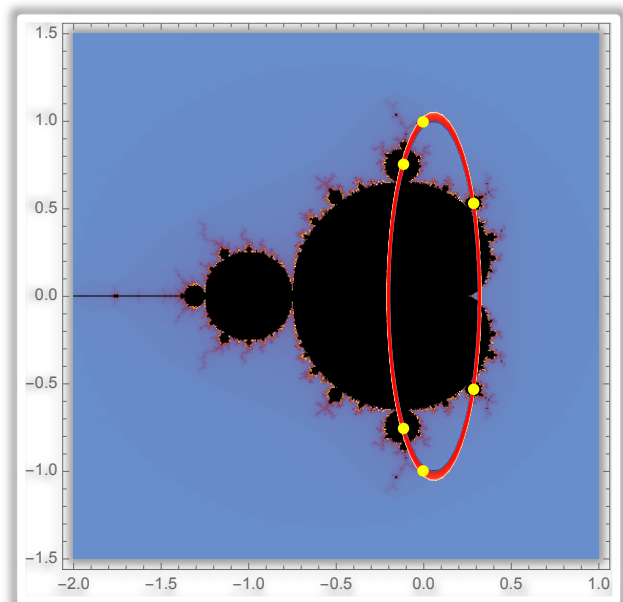
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Venerdì 24 Maggio, ore 14:30, Aula M2

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## The Mandelbrot set: geometry and arithmetic

Abstract: The Mandelbrot set  $M$  has been studied for many years and continues to baffle mathematicians. By definition,  $M$  is the set of all complex numbers  $c$  for which the orbit of  $0$  is bounded under iteration of  $f(z) = z^2 + c$ . Within  $M$ , there is a distinguished subset of what we call "PCF" or "special" parameters, where the orbit of  $0$  is finite. These parameters are special from both a dynamical and - somewhat surprisingly - a number-theoretic point of view. In this talk, we'll explore how the geometry of these PCF parameters is restricted by the number theory. This is joint work with Myrto Mavraki.



*A rendering of the Mandelbrot Set*