

THE CRM APPLIED MATHEMATICAL PHYSICS (CAMP) SEMINARS



CENTRE DE RECERCA MATEMÀTICA

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Numerical computation of invariant objects with wavelets

Abstract:

In certain classes of dynamical systems invariant sets with a strange geometry appear. For example the iteration of two-dimensional quasi-periodically forced skew product, under certain conditions, gives us Strange Non-Chaotic Attractors. To obtain analytical approximation of these objects it seems more natural to use wavelets instead of the more usual "fourier approach". The aim of the talk is to describe the algorithm for the semi-analytical computation of the invariant object (numerical computations of the wavelet coefficients) using both daubechies and Haar wavelets. The aim for this exercise is twofold. From one side to be able to study bifurcations and "pinching" of the object and from another side to get estimates of the regularity of the object. The study of this regularity depending on parameters may give another point of view to the "fractalization routes" described in the literature and that are currently under discussion.

Date: October 6, 2016

Place: Room C1/028

Time: 12:00

