SCIENTIFIC PROGRAMME

At least 4 different events are planned for the semester which will start late August 2017 and will finish by mid February 2018. Additional events may still appear and will be displayed on the dedicated website. All events listed below will take place at Cirm-Luminy.

RESEARCH SCHOOL
(1720)
Tiling Dynamical System
Dates: 20-24 November 2017

Tiling dynamical system gives a generalization of substitutive dynamical system. It gives a nice model of quasi-crystals, recognized as another new stable state of real materials. International experts on this topic will meet PhD students interested in this developing area. The week will focus in particular on Basic terminology in tiling and point sets, Spectral property of tiling dynamical systems, and Recurrence property of tilings.

CONFERENCE
(1721)
Tilings and Recurrence
Dates: 4-8 December 2017

This conference will look at the recent developments around the mathematical theory of tilings and its recurrence properties, which have a lot of connections with other areas like number theory, dynamical system, quasi-crystal, computer science and discrete geometry. It will focus particularly on the areas of Recurrence properties of tiling and number theory, Spectral property of tiling dynamical systems, and Aperiodic tile set and quasi-crystals.

SMALL GROUP WORKSHOP
(1804)
Zero Entropy System
Dates: 27 Nov-1st Dec 2017

This workshop intends to focus on zero entropy systems and their self-inducing structures. Such systems arose as a model of physical phenomena in absolute zero temperature. A historically difficult problem is to show their stability. More precisely, we would like to prove the rareness of unstable configuration.

Key words: Billiards - Interval Exchange and Piecewise isometry - Discretized rotation

RESEARCH IN PAIRS
(1805)
Bernoulli Convolutions and Salem Numbers
Dates: 22 October-5 November 2017

Bernoulli convolutions are probably the simplest and most well studied examples of self-similar measures with overlaps. They form a family of self-similar measures, each associated to some parameter lambda, but despite extensive study over the years there are very few classes of lambda for which we know whether the corresponding Bernoulli convolution is absolutely continuous.

We shall study Bernoulli convolutions associated to Salem numbers by first constructing a countable Markov shift associated with the corresponding set of finite polynomials, and then studying the structure of this shift and its recurrence properties. This project lies at the interface between dynamical systems, fractal geometry and number theory.

http://akiyama-arnoux.weebly.com/