Continuous eigenvalues for Meyer sets.
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Abstract

Let $D \subset \mathbb{R}^d$ a Delone set and $(X_D, \mathbb{R}^d)$ its dynamic hull system. Following [1] when the abelian group $[D - D]$ is a finitely generated with $r$ generators, we say that the rank of $D$ is $r$ and we write $\text{rank}(D) = r$. In this talk we will give a dynamical proof of the following result that appears in [3].

**Theorem 1.** Let $D \subset \mathbb{R}^d$ be a repetitive Meyer set with $\text{rank}(D) = r$. The system $(X_D, \mathbb{R}^d)$ has $r \geq d$ continuous eigenvalues.

In dimension $d = 1$, following some ideas in [2], we will give conditions that ensure that every eigenvalue is continuous.

**Theorem 2.** Let $D \subset \mathbb{R}$ be a repetitive Meyer set such that $(X_D, \mathbb{R})$ is linearly recurrent. Suppose that exists a sequence of Kakutani-Rokhlin partitions such that for any integer $m \geq 1$ the heights $h_1(m), \ldots, h_c(m)$ are rationally independent. Then $(X_D, \mathbb{R})$ has only continuous eigenvalues.

We will exhibit some examples of dynamical system where Theorem 2 applies. Also we work two examples to observe that the hypotheses of being Meyer and having rationally independent heights are necessary in Theorem 2.

This is a joint work with Daniel Coronel.

References: