Interval Translation Maps with Weakly Mixing Attractors

Abstract for Numeration 2023

Silvia Radinger

In 2003 H. Bruin and S. Troubetzkoy studied a renormalization map for a two-parameter family of interval translation maps. For a non-typical subset of the parameter space the interval translation map has a Cantor attractor. The renormalization G, a procedure similar to the Rauzy induction, acts as dynamics on the parameter space, can be used to find the attractor and, in the case of a Cantor attractor, to decide whether the interval translation map is uniquely ergodic.

In this talk we further study these systems, focusing on weak mixing. We look at the symbolic representation of the interval translation map to define a S-adic subshift and use results about the eigenvalues of Bratteli-Vershik systems to determine whether the interval translation map is weakly mixing. Additionally we characterize the subset of linearly recurrent interval translation maps and their eigenvalues.

This is a joint work with Henk Bruin.