



Analysis, Algebra & Geometry Meetings

DIPARTIMENTO SMFI - UNIVERSITÀ DI PARMA

21.11.2023

15:30

AULA B - PLESSO DI MATEMATICA

LUCA MARCHESE (UNIVERSITÀ DI BOLOGNA)

TRANSFER OPERATORS AND DIMENSION OF BAD SETS FOR NON-UNIFORM FUCHSIAN LATTICES

The set of real numbers which are badly approximable by rationals admits an exhaustion by sets $\text{Bad}(c)$, whose dimension converges to 1 as c goes to zero. D. Hensley computed the asymptotic for the dimension up to the first order in c , via an analogous estimate for the set of real numbers whose continued fraction has all entries uniformly bounded. We consider diophantine approximations by parabolic fixed points of any non-uniform lattice in $\text{PSL}(2, \mathbb{R})$ and a geometric notion of c -badly approximable points. We compute the dimension of the set of such points up to the first order in c , via the thermodynamic method of Ruelle and Bowen. Geometric good approximations are related to a notion of bounded partial quotients for the Bowen-Series expansion. This gives a family of Cantor sets and associated quasi-compact transfer operators, with simple and positive maximal eigenvalue. Perturbative analysis of spectra applies.