Introduction

Schedule

4/25 A brief introduction to the Fermi acceleration problem

4/28 The generalized Hopf argument

4/29 Ergodicity for dynamical systems with singularities

4/30 Application of generalized Hopf argument in the Fermi acceleration problem

Reference

1.J. de Simoi & D. Dolgopyat. Dispersing Fermi-Ulam Models. To appear in *Annales Henri Lebesgue*.

2.D. Dolgopyat. Fermi acceleration. Canadian Mathematical Society Winter Meeting. December 2006. https://math.umd.edu/~dolgop/FA.pdf

3.D. Dolgopyat. Lectures on bouncing balls. Murcia, Spain, January 2013. https://math.umd.edu/~dolgop/BBNotes2.pdf

4.C. Liverani and M. Wojtkowski. Ergodicity in Hamiltonian systems. *Dynamics Reported: Expositions in Dynamical Systems*. Springer, Berlin, Heidelberg, 1995, pp. 130 – 202.

5.J. Zhou, A piecewise smooth Fermi-Ulam pingpong with potential. *Ergodic Theory Dynam. Systems* 42 (2022), no.5,

1847-1870.

Pre-requisite： Real analysis