

Mini Course

Two approaches for the quantitative study of chaotic dynamical systems

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Schedule:	Lecture 1: Tuesday, May 9, 2017, 9:30–11:00 Lecture 2: Thursday, May 11, 2017, 9:30–11:00
VENUE:	Lecture Hall 2, IPM Niavaran Bldg., Niavaran Square, Tehran

ABSTRACT. I will talk about two methods for studying the statistical properties of dynamical systems, with the main goal being the rate of decay of correlations. The advantage of both methods is that one can study the system directly without having to code the system first.

In the first lecture, I will talk about the functional analytic/spectral method and in the second lecture I will discuss the coupling method. To keep the ideas more evident I will use 1D piece-wise expanding maps as examples, but will also briefly comment on higher dimensional extensions of these methods.

References

- [1] A. Boyarsky, P. Góra, *Laws of chaos. Invariant measures and dynamical systems in one dimension.* Probability and its Applications. Birkhuser Boston, Inc., Boston, MA, 1997.
- [2] N. Chernov, R. Markarian, *Chaotic billiards*. Mathematical Surveys and Monographs, 127. American Mathematical Society, Providence, RI, 2006.



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