Thematic Program on
Dynamical Systems
School of Mathematics, IPM, Tehran
February-May 2017

IPM
Institute for Research in Fundamental Sciences

Mini Course

Random walk on the group of matrices and diffeomorphisms: a dynamical point of view

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Schedule:	Lecture 1: Tuesday, Feb. 28, 2017, 9:30–10:45 Lecture 2: Tuesday, Feb. 28, 2017, 14:00–15:30 Lecture 3: Wednesday, March 1, 2017, 9:30–10:45 (Lecture Hall 1)
Venue:	Lecture Hall 2, IPM Niavaran Bldg., Niavaran Square, Tehran

Abstract. In this minicourse, I pretend to recall the fundamental work of Furstenberg on the random product of matrices, its generalization by Ledrappier for the stationary sequence of matrices and finally the nonlinear version by Avila-Viana. In a recent result joint with J. Yang we give a new proof of some of these results and give an entropic interpretation for the invariance principle. As a by-product we analyse the high entropy measures of partially hyperbolic dynamics in dimension 3 when the central leaves are compact.

References

[1] H. Furstenberg, *Non-commuting random products*, Trans. Amer. Math. Soc., **108** (1963), 377–428.

[2] F. Ledrappier, *Positivity of the exponent for stationary sequences of matrices.* In Lyapunov exponents (Bremen, 1984), Lect. Notes Math. vol. 1186, (1986), pp. 56–73.

[3] A. Avila, M. Viana, *Extremal Lyapunov exponents: an invariance principle and applications.* Invent. Math. **181** (2011), 115–178.