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Non-Zero Lyapunov Exponents in Families of Dynamical Systems

We compare the average Lyapunov exponent in families of twist maps and one dimensional expanding maps to the Lyapunov exponents of random products chosen i.i.d. from these families. For some families we prove that the average exponent is bigger than the random exponent. In other cases the provable and experimental results are very suggestive.

Different portions of the work surveyed are joint work with Francois Ledrappier, Rafael de la LLave, Enrique Pujals, Leonel Robert, Carles Simo and Amie Wilkinson.