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Anton Gorodetski* (asgor@math.uci.edu), Department of Mathematics, UC Irvine, Irvine, CA 92617. *Random matrix products with parameter.*

Random products of matrices appear naturally in smooth dynamical systems, probability theory, spectral theory, mathematical physics. The crucial result is Furstenberg's Theorem on positivity of Lyapunov exponents. It claims that generically the exponential rate of growth (Lyapunov exponent) of product of random matrices is well defined and positive. We consider random products of 2×2 matrices depending on a parameter, and study existence and properties of Lyapunov exponent for a typical fixed sequence when the parameter varies. This is motivated, in particular, by discrete Schrodinger operators with random potentials. The Schrodinger cocycle is given by the random products of transfer matrices, and energy serves as a natural parameter. It is natural to fix the potential first, and then vary the energy. We show that in the non-uniformly hyperbolic regime almost surely upper Lyapunov exponent is positive (and coincides with the one prescribed by Furstenberg Theorem) for all parameters, but lower Lyapunov exponent vanishes for a topologically generic parameter. As a byproduct of our construction, these provides a geometrical proof of the classical 1D Anderson localization for random Schrodinger operators. This is a joint project with V. Kleptsyn. (Received September 05, 2017)