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Hiroki Sumi* (sumi@math.sci.osaka-u.ac.jp), Department of Mathematics, Graduate School of Science, Osaka University, 1-1 Machikaneyama, Toyonaka, Osaka 560-0043, Japan. *Negativity of Lyapunov Exponents of Generic Random Dynamical Systems of Complex Polynomials.*

In this talk, we consider random dynamical systems of complex polynomial maps on the Riemann sphere. It is well-known that for each rational map f of degree two or more, the Julia set is a non-empty perfect compact set, the dynamics of f on the Julia set is chaotic, and for the set A of initial points z in the Riemann sphere at which the Lyapunov exponent is positive, the Hausdorff dimension of A is positive. However, we show that for a generic i.i.d. random dynamical system of complex polynomials, all of the following (1) and (2) holds, due to the effect of randomness.

(1) For all but countably many initial points z in the Riemann sphere, for almost every sequence of polynomials, the Lyapunov exponent along the sequence starting with z is negative.

(2) For all points z in the Riemann sphere, the orbit of the Dirac measure at z under the dual map of the transition operator of the system converges to a periodic cycle of probability measures on the Riemann sphere.

Note that each of (1) and (2) cannot hold in the usual iteration dynamics of a single rational map f of degree two or more.

References: H. Sumi, Cooperation principle, stability and bifurcation in random complex dynamics, *Adv. Math.* 245 (2013), 137-181. (Received August 12, 2014)