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Classification of generic random holomorphic dynamical systems associated with analytic families of rational maps. Preliminary report.

We consider random holomorphic dynamical systems (with multiplicative noise) and we show that generic such systems have some kind of nice properties and order (e.g, for all but countably many initial value z , for a.e. orbit, the Lyapunov exponent is negative). This result represents a kind of randomness(noise)-induced phenomenon. In particular, we consider the analytic family $Y = \{z + \lambda f(z)\}_{\lambda \in \mathbb{C} \setminus \{0\}}$, where f is a quadratic polynomial without double zero, and we classify generic random dynamical systems of elements of Y which have such nice properties and order. Since the noise is multiplicative, we have to overcome several kinds of difficulties. For the preprint, see H. Sumi, Negativity of Lyapunov Exponents and Convergence of Generic Random Polynomial Dynamical Systems and Random Relaxed Newton's Methods, <https://arxiv.org/abs/1608.05230>. (Received August 28, 2019)