

Title: Long-time Influence of Small perturbations.

Abstract: Random perturbations of systems which are close to a system with a first integral are considered. In an appropriate time scale, the limiting behavior of the perturbed system is, to some extent, universal: the evolution of the first integral is the same for a broad class of noises. In particular, the long time behavior of a deterministic system, due to instabilities in the original system, can be stochastic, and stochastic systems, due to the averaging, can have a reduced stochasticity. The distribution of the limiting process is calculated explicitly.]