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Attractors and their stability

Abstract.

One of the fundamental problems in dynamics is to understand the attractor of a system, i.e. the set where most orbits spent most of the time. As soon as the existence of an attractor is determined, one would like to know if it persists in a family of systems and in which way i.e. its stability. Attractors of one dimensional systems are well understood, and their stability as well. I will discuss attractors of two dimensional systems, starting with the special case of Henon maps. In this setting very little is understood. Already to determine the existence of an attractor is a very difficult problem. I will survey the known results and discuss the new developments in the understanding of attractors, coexistence of attractors and their stability for two dimensional dynamical systems.

