Structure and continuity properties of attractors for non-autonomous dynamical systems

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Resumen

Although the theory of attractors for autonomous dynamical systems is well-developed, classically there is only one class of equations for which one has a good understanding of the structure of the attractor, namely gradient systems. In this case the attractor is the union of the unstable manifolds of the equilibria. Such attractors, whatever underlying system gives rise to them, can be shown to change continuously under perturbation, even when the perturbation is non-autonomous.

In addition, we show that the attractor of systems that are small non-autonomous perturbations of gradient systems have the same structure, giving the first class of non-autonomous systems in which we have a good understanding of the structure of the attractor.