
ANKAI LIU, York's University

Properties of long transient dynamic and its applications

There has been growing interest in non-asymptotic behaviors of solutions that last for a very long time. Here we present a framework for the systematic mathematical treatment of long transient behaviors. We focus on transient centers, points near which long transient dynamics of arbitrary slowness and arbitrary duration arise. We continue the work by deriving further properties of transient centers. We expand upon some existing results on transient centers and its reachability. We demonstrate the application of the results on complicated systems such as Predator-prey models, SIR models and so on.