

Chapter 15

Stretch, fold, prune

I.1. Introduction to conjugacy problems for diffeomorphisms. This is a survey article on the area of global analysis defined by differentiable dynamical systems or equivalently the action (differentiable) of a Lie group G on a manifold M . Here $\text{Diff}(M)$ is the group of all diffeomorphisms of M and a diffeomorphism is a differentiable map with a differentiable inverse. (...) Our problem is to study the global structure, i.e., all of the orbits of M .

—Stephen Smale, *Differentiable Dynamical Systems*