EXPANSIVITY OF COMPACT INVARIANT SPACES

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Abstract: Uniformly hyperbolic systems are presently fairly well understood, both from the topological and the ergodic point of view. Outside the hyperbolic domain, two main phenomena occur: homoclinic tangencies and cycles involving saddles with different indices. When the dynamics of a system (here a diffeomorphism f) is complicated, one tries to study the global dynamics of the system by looking at those regions of the ambient space which concentrate the recurrences and the intricate parts of the dynamics. The non-wandering set is one of the most common sets used by dynamicists for localizing the complexity. There are other possibilities which are usually compact invariant set such as the limit set, the closure of the periodic points or the chain recurrent set. We shall attempt here to build up necessary background and present some of our results related to hyperbolicity of homoclinic classes.