

Linking in horseshoes and 3-dimensional Reeb flows

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By a classical theorem of Katok, the topological entropy of a C^2 surface diffeomorphism can be "recovered" by horseshoes (provided it is non-vanishing): there is a sequence of compact hyperbolic sets on which the dynamics is that of a shift map and their topological entropy converges to that on the whole space. Recently, Alves and Pirnapasov discovered some orbit forcing phenomena for 3-dimensional Reeb flows. The presence of special links of Reeb orbits with some "rich contact homology in the complement", gives positive lower bounds for the topological entropy. In my talk, I will explain how in some quite general situations, topological entropy of 3-dimensional Reeb flows can be recovered, similar to Katok's theorem, by a sequence of links of closed orbits. I will then discuss a result, obtained in collaboration with M. Alves, L. Dahinden, and A. Pirnapasov, on robustness features of topological entropy under C^0 -small perturbations of the defining contact forms.