

Invariant Sets and Hyperbolic Periodic Orbits of Reeb Flows

Viktor GINZBURG¹

¹ Santa Cruz

The presence of hyperbolic periodic orbits or invariant sets often has an affect on the global behavior of a dynamical system. In this talk we will discuss two theorems along the lines of this phenomenon, extending some properties of Hamiltonian diffeomorphisms to dynamically convex Reeb flows on the sphere in all dimensions. The first one, complementing other multiplicity results in the context of Reeb flows, is that the existence of a hyperbolic periodic orbit for such a flow forces it to have infinitely many periodic orbits. This result can be thought of as a step towards Franks' theorem for Reeb flows. The second result is a contact analogue of the higher-dimensional variant of the Le Calvez-Yoccoz theorem, asserting that no periodic orbit of a Hamiltonian pseudo-rotation is isolated as an invariant set. The talk is based on a joint work with Erman Cineli, Basak Gurel and Marco Mazzucchelli.