

Closed orbits on symmetric spheres and dynamical convexity

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Let G be a group acting on the sphere S^{2n+1} . We introduce a notion of strong dynamical convexity for G -invariant contact forms supporting the standard contact structure and show that every (possibly degenerate) G -invariant strongly dynamically convex contact form carries at least $n + 1$ simple closed orbits. We prove that convex contact forms invariant by the antipodal map are strongly dynamically convex. Finally, given $n \geq 2$, we provide examples of dynamically convex contact forms on S^{2n+1} that cannot be contactomorphic to a convex one via a contactomorphism that commutes with the antipodal map. This is an ongoing joint work with Viktor Ginzburg.