Multiplicity of periodic orbits for dynamically convex contact forms

Miguel Abreu (Lisbon)

Abstract:
The contact Conley conjecture (CCC) establishes that the Reeb flow of any contact form has infinitely many simple closed orbits whenever the contact manifold satisfies some conditions. Ginzburg-Gurel-Macarini proved, under some mild extra assumptions, that an index admissible contact form on a prequantization of an aspherical symplectic manifold has infinitely many simple closed orbits, providing a partial positive answer to the CCC for these prequantizations. When the base is not aspherical it is easy to see that the CCC can fail. In this talk I will present some recent results on the multiplicity of periodic orbits for Reeb flows on prequantizations over non-aspherical basis, assuming some sort of convexity of the contact form. This is joint work with Leonardo Macarini.