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„Arnol'd Conjecture and Morava K-theory“

Abstract:

After a brief review of the Arnol'd Conjecture, I will give an overview of the proof of the following joint result with Blumberg: for every closed symplectic manifold, the number of time-1 periodic orbits of a non-degenerate Hamiltonian is bounded below by the rank of the cohomology with coefficients in any field. The case of characteristic 0 was proved by Fukaya and Ono as well as Li and Tian. The new ingredient in our proof is the construction of generalised Floer cohomology groups with coefficients in Morava K-theory. This means that we have to use higher dimensional moduli spaces of pseudo-holomorphic curves, and extract "fundamental chains" in generalised homology.