Persistence Homology in Symplectic and Contact Topology



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## The Toda lattice, billiards and the Viterbo conjecture (via Zoom)

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The Toda lattice is one of the earliest examples of non-linear completely integrable systems. Under a large deformation, the Hamiltonian flow can be seen to converge to a billiard flow in a simplex. In the 1970s, action-angle coordinates were computed for the standard system using a non-canonical transformation and some spectral theory. In this talk, I will explain how to adapt these coordinates to the situation of a large deformation and how this leads to new examples of symplectomorphisms of Lagrangian products with toric domains. In particular, we find a sequence of Lagrangian products whose symplectic systolic ratio is one and we prove that they are symplectic balls. This is joint work with Y. Ostrover and D. Sepe.

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