

Northern California Symplectic Geometry Seminar

BERKELEY – DAVIS – SANTA CRUZ – STANFORD

Monday, October 5th, 2020

at Stanford (virtually)

1–2pm, on Zoom

Andreas Floer Memorial Lecture

Grisha Mikhalkin (Geneva University)

Exotic embeddings of symplectic cubes

Abstract: By a symplectic cube $C(A)$ we mean the product of n disks of area $A > 0$. For $1/2 < A < 2/3$ we exhibit symplectic embeddings of $C(A)$ into $C(1)$ that are not equivalent with respect to Hamiltonian isotopy and coordinate permutations. The number of such embeddings grows arbitrary large when A approaches $1/2$. The construction continues the series of symplectic applications of (toric) geometry of Markov's equation $a^2 + b^2 + c^2 = 3abc$ (and its clones like $a^2 + 2b^2 + c^2 = 4abc$) uncovered in the 2010 preprint of Galkin and Usnich. Joint work with Joé Brendel and Felix Schlenk.

2:30–3:30pm, on Zoom

Mohammed Abouzaid (Columbia University)

Arnol'd Conjecture and Morava K-theory

Abstract: 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 generalized 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 from their Kuranishi structures "fundamental chains" in generalized cohomology.

Please contact ionele@stanford.edu for the Zoom info.

Organizers: R. Casals, Y. Eliashberg, D. Fuchs, D. Gardiner, V. Ginzburg, M. Hutchings, E. Ionel, R. Montgomery, V. Shende, L. Starkston, K. Wehrheim, A. Weinstein