

Northern California Symplectic Geometry Seminar

BERKELEY – DAVIS – SANTA CRUZ – STANFORD

Monday, November 6th, 2021

at Stanford

2:30–3:30pm, room 383N

Pazit Haim-Kislev (Tel-Aviv University)

On the existence of symplectic barriers

Abstract: In his seminal 2001 paper, Biran introduced the concept of Lagrangian Barriers, a symplectic rigidity phenomenon coming from obligatory intersections with Lagrangian submanifolds which don't come from mere topology.

In this joint work with Richard Hind and Yaron Ostrover, we present what appears to be the first illustration of Symplectic Barriers, a form of symplectic rigidity stemming from necessary intersections of symplectic embeddings with symplectic submanifolds (and in particular not Lagrangian). In our work, we also tackle a question by Sackel–Song–Varolgunes–Zhu and provide bounds on the capacity of the ball after removing a codimension 2 hyperplane with a prescribed Kähler angle.

3:30–4:00pm — Tea Break

4:00–5:00pm, room 383N

Richard Hind (University of Notre Dame)

Isotopies and squeezing of monotone Lagrangian tori

Abstract: Distinct Hamiltonian isotopy classes of Lagrangian tori in $\mathbb{C}\mathbb{P}^2$ can be associated to Markov triples. With two exceptions, each of these tori are symplectomorphic to exactly three Hamiltonian isotopy classes of tori in the ball (the affine part of $\mathbb{C}\mathbb{P}^2$). We investigate quantitative invariants, which can distinguish the tori corresponding to at least one sequence of Markov triples. A similar analysis for $S^2 \times S^2$ produces symplectomorphic tori which are not Hamiltonian diffeomorphic. This is joint work with Grigory Mikhalkin and Felix Schlenk.

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