Northern California
Symplectic Geometry Seminar

BERKELEY – DAVIS – SANTA CRUZ – STANFORD

Monday, December 2nd, 2024

at Stanford

2:30–3:30pm, room 384H

Nicki Magill (UC Berkeley)

Ellipsoid embeddings into convex toric domains

Abstract: The ellipsoid embedding function generalizes symplectic ball packing problems. For a symplectic manifold, this function determines the minimum scaling factor required for a standard ellipsoid with a given eccentricity to embed symplectically into the manifold. If the function has infinitely many nonsmooth points, it is said to have an infinite staircase. An infinite staircase implies that an infinite number of distinct obstructions are needed to characterize the function. In this talk, we will present partial results addressing the question: when does the ellipsoid embedding function for a convex toric domain have an infinite staircase? This will include joint work with McDuff-Weiler, Pires-Weiler, and upcoming work with Cristofaro-Gardiner and McDuff.

3:30–4:00pm — Tea Break

4:00–5:00pm, room 383N

Viktor Ginzburg (UC Santa Cruz)

Towards the HZ- and multiplicity conjectures for dynamically convex Reeb flows

Abstract: In this talk, based on a joint work with Erman Cineli and Basak Gurel, we discuss the multiplicity problem for prime closed orbits of dynamically convex Reeb flows on the boundary of a star-shaped domain. The first of our two main results asserts that such a flow has at least n prime closed Reeb orbits, settling a conjecture which is usually attributed to Ekeland. The second main theorem is that when, in addition, the domain is centrally symmetric and the Reeb flow is non-degenerate, the flow has either exactly n or infinitely many prime closed orbits. This is a higher-dimensional contact variant of Franks' celebrated 2-or-infinity theorem and, viewed from the symplectic dynamics perspective, settles a particular case of the contact Hofer-Zehnder conjecture.