Northern California Symplectic Geometry Seminar

Berkeley – Davis – Santa Cruz – Stanford

Monday, November 1st, 2021

at Stanford (virtually)

1–2pm, on Zoom

Yaniv Ganor (Technion)

Big Fiber Theorems and Ideal-Valued Measures in Symplectic Topology

Abstract: In various areas of mathematics there exist "big fiber theorems", these are theorems of the following type: "For any map in a certain class, there exists a 'big' fiber", where the class of maps and the notion of size changes from case to case. We will discuss three examples of such theorems, coming from combinatorics, topology and symplectic topology from a unified viewpoint provided by Gromov's notion of ideal-valued measures. We adapt the latter notion to the realm of symplectic topology, using an enhancement of Varolgunes' relative symplectic cohomology to include cohomology of pairs. This allows us to prove symplectic analogues for the first two theorems, yielding new symplectic rigidity results.

Necessary preliminaries will be explained. The talk is based on a joint work with Adi Dickstein, Leonid Polterovich and Frol Zapolsky.

2:30–3:30pm, on Zoom

Andreas Floer Memorial Lecture

Mohammed Abouzaid (Columbia University)

Complex cobordism and Hamiltonian fibrations

Abstract: I will discuss joint work with McLean and Smith, lifting the results of Seidel, Lalonde, and McDuff concerning the topology of Hamiltonian fibrations over the 2-sphere from rational cohomology to complex cobordism. In addition to the use of Morava K-theory (as in the recent work with Blumberg on the Arnold Conjecture), the essential new ingredient is the construction of global Kuranishi charts for genus 0 pseudo-holomorphic curves; i.e. their realisation as quotients of zero loci of sections of equivariant vector bundles on manifolds.

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

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