Department of Mathematics

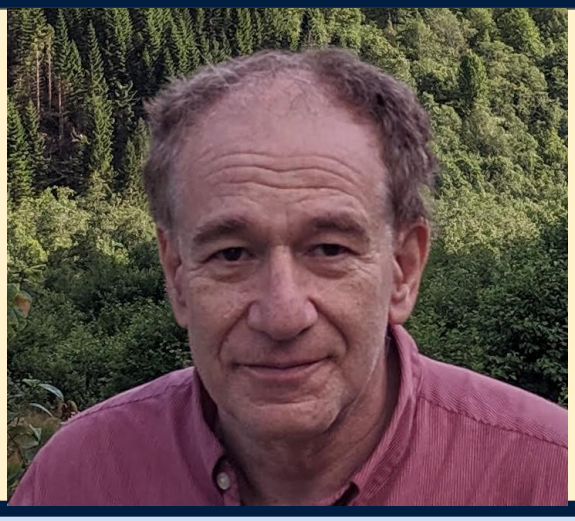
Alexander Ziwet Lectures

October 11-13, 2022

Leonid Polterovich

The Gordon Chair in Dynamical Systems and Symplectic Topology and Professor of Mathematics
Tel Aviv University

A reception for Professor Polterovich will be held on Tuesday, October 11, at 5:00 p.m. in the Mathematics Upper Atrium, East Hall



Topological Persistence in Geometry and Analysis

Tuesday, October 11 - 4:00 p.m. - Room 1360 East Hall

Persistence modules and barcodes is an emerging field of algebraic topology which originated in data analysis. I will discuss its applications to function theory and to symplectic geometry. Joint with Lev Buhovsky, Jordan Payette, Iosif Polterovich, Egor Shelukhin, and Vukasin Stojisavljevic.

Symplectic Maps: Algebra, Geometry, Dynamics

Wednesday, October 12 - 4:00 p.m. - Room 1360 East Hall

Symplectic maps arise as symmetries of a geometric structure, a symplectic form, on a manifold, and as a mathematical model of admissible motions of classical mechanics. I will discuss a number of rigidity phenomena of algebraic, geometric, and dynamical nature exhibited by these maps. Joint with Egor Shelukhin.

Big Fiber Theorems and Ideal-Valued Measures

Thursday, October 13 - 4:00 p.m. - Room 1360 East Hall

I will discuss an adaptation of Gromov's ideal-valued measures to symplectic topology. It leads to a unified viewpoint at three "big fiber theorems": the Centerpoint Theorem in combinatorial geometry, the Maximal Fiber Inequality in topology, and the Non-displaceable Fiber Theorem in symplectic topology, and yields applications to symplectic rigidity. Joint work with Adi Dickstein, Yaniv Ganor, and Frol Zapolsky.

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Each lecture will be self-contained