

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

RELATING CATEGORICAL DIMENSIONS IN TOPOLOGY AND SYMPLECTIC GEOMETRY

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CCDS 365, Feb 19, 2024, 4-5pm

Tea: 3:45pm in Room 365

Abstract: In this talk, I will survey several notions of dimension for (pre-)triangulated categories naturally arising from topology and symplectic geometry. I will discuss joint work with Andrew Hanlon and Jeff Hicks in which we prove new bounds on these dimensions and raise several questions for further investigation. For instance, we relate the Rouquier dimension of the wrapped Fukaya category of either the cotangent bundle of smooth manifold or more generally a Weinstein domain X to quantities of geometric interest. These quantities include the minimum number of critical values of a Morse function on M , the Lusternik-Schnirelmann category of M , the number of distinct action values of a Hamiltonian diffeomorphism of X , and the smallest n such that X admits a Weinstein embedding into the contact manifold \mathbb{R}^{2n+1} . I will also survey the necessary tools, like the colimit formula of Ganatra-Pardon-Shende for the wrapped Fukaya category and related work of Bai-Cote.

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin (yslin@bu.edu) or Brian Williams (bwill22@bu.edu) for more information.