

Short Research Talks

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Title: Symplectic Banach-Mazur distance and persistence barcodes.

Abstract: Let \mathcal{C}_M be the set of all "nice" fiberwise star-shaped domains inside the cotangent bundle of a smooth manifold M . We will equip \mathcal{C}_M with a distance, called symplectic Banach-Mazur distance, and study the large-scale geometry of this space when M is a surface of positive genus. In particular, we will show that for all positive integers N one may quasi-isometrically embed \mathbb{R}^N into this space. Fiberwise star-shaped domains which realize the quasi-isometric embedding are constructed as unit codisc bundles of certain Riemannian metrics. The main technical tool we use is stability (with respect to symplectic Banach-Mazur distance) of persistence barcodes coming from filtered symplectic homologies of domains in \mathcal{C}_M . The talk is based on a joint work with Jun Zhang.