TOPOLOGY SEMINAR

The Gromov-Hausdorff distance between spheres

By

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Abstract: The Gromov-Hausdorff distance is a fundamental tool in Riemanian geometry, and also in applied geometry and topology. Whereas it is often easy to estimate the value of the distance between two given metric spaces, its precise value is rarely easy to determine. Some of these estimates follow from considerations related to the notion of 'persistent homology' and Gromov's filling radius. However, these turn out to be non-sharp. In this talk I will describe results that we have obtained which permit calculating the precise value to the Gromov-Hausdorff between certain pairs of spheres (endowed with their geodesic distance). These results involve lower bounds, which arise from certain versions of the Borsuk-Ulam theorem which are applicable to discontinuous maps, and from the construction of specialized ``correspondences'' between spheres which yield matching upper bounds in some cases.

Date: April 11, 2022
Time: 15:00
Place: Zoom

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