

Gromov-Hausdorff distance and isometry

Philipp Schlicht

University of Bonn, Germany
schlicht@math.uni-bonn.de

Session: 32. Set Theory

The Gromov-Hausdorff distance measures how closely two metric space can be embedded into a third metric space. For compact metric spaces, Gromov-Hausdorff distance 0 implies isometry, but this is false for arbitrary Polish spaces. We consider the equivalence relation E_{GH} between Polish spaces defined by having Gromov-Hausdorff distance 0 from the viewpoint of Borel reducibility, and show that it is at least as complicated as isometry of Polish spaces. In order to compare E_{GH} with isometry, we study the complexity of isometry on single E_{GH} classes and show how to realize various equivalence relations such as the iterated Friedman-Stanley jumps of the equality relation.