

abstract

SPECIAL GEOMETRY/DYNAMICAL SYSTEMS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

The k -dilation of a mapping F measures how much the mapping stretches k -dimensional areas. If a map F has k -dilation L , then it maps each k -dimensional surface of k -volume V to an image of k -volume at most LV . If the k -dilation of a map is very small, it means that the map contracts all the k -dimensional areas.

We discuss how the k -dilation of a map relates to the homotopy type of the map. For example, we prove that there are homotopically non-trivial maps from the unit 9-sphere to the unit 8-sphere with arbitrarily small 6-dilation. On the other hand, we prove that every map from the unit 9-sphere to the unit 8-sphere with 5-dilation less than 10^{-50} is homotopically trivial.