

Geometric embeddings of metric spaces

The purpose of this course is to introduce the students to several aspects of metric geometry. Some of the key notions are doubling spaces, Gromov-Hausdorff convergence, different notions of dimensions and bi-Lipschitz embeddings. The problem of approximating a given graph metric by a "simpler" metric lies at the heart of numerous applications in computer sciences, as well as online algorithms including ones for group Steiner tree, metric labeling, buy-at-bulk network design and metrical task system.