

Algebra/Topology Seminar

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MULTI-SCALE MODELING AND ANALYSIS OF STRATIFIED SPACE DATA

Thursday, January 28, 2016
1:15 p.m. in ES-143

ABSTRACT. Geometric and topological methods in data analysis are capable of exposing essential shape information that may be hidden in the original data. In this talk, the datasets we will be interested in are those that are sampled from stratified spaces. We will introduce a method for extracting multi-scale geometric and topological features from a dataset that capture diverse types of local information about the underlying space. We will also introduce an algorithm for producing multi-scale models for stratified space data using an adaptive cover tree methodology, techniques from persistent homology, and multi-scale local principal component analysis. We will consider applications of our models to musical audio data.