

## **Topological Similarity of Random Cell Complexes, and Curvature Flow on Graphs**

Ben Schweinhar, Harvard University

In this talk, I'll introduce the method of swatches, which describes the local topology of a cell complex in terms of probability distributions of local configurations. It allows a distance to be defined which measures the similarity of the local topology of cell complexes. Convergence in this distance is related to the notion of a Benjamini Schramm graph limit. I will use this to state universality conjectures about the long-term behavior of graphs evolving under curvature flow, and to test these conjectures computationally. The application is of both mathematical and physical interest. If time permits, I will briefly introduce a related notion of geometric graph limit which controls geometric as well as topological properties.