A WEEK AT INFINITY

Time: Mar 29th - Apr 1st, 2022

Zoom Meeting ID: 929 3548 2318
Passcode: boundary

Speakers:

Kasra Rafi (University of Toronto)　Mar 29th-Apr 1st, Tue-Fri, 13:00-14:00

Title: Sublinearly Morse Boundaries

Abstract: The sub-linearly Morse boundary is meant to be a natural generalization of the Gromov boundary of a Gromov hyperbolic space. A guiding principle for our approach is that many arguments used in the setting of Gromov hyperbolic spaces still work in the setting of proper geodesic metric spaces and the uniform error terms can often be replaced with sub-linear error terms. We examine to what extend this is true and the natural concepts that arise from this principle.

　　Our goal is to give a detailed overview of the construction of the sub-linearly Morse boundary. We show that this is a large boundary and sub-linearly Morse directions are generic with respect to many different notions of generic. We also investigate the properties of the sub-linearly Morse boundary in several special cases, namely, relatively hyperbolic groups and mapping class group.

Giulio Tiozzo (University of Toronto)　Mar 30th-Apr 1st, Wed-Fri, 14:30-15:45
Title: Poisson boundaries for random walks on groups - with a view towards geometric group theory
Abstract: The Poisson boundary is a probability space canonically associated to a group, once equipped with a measure. Its construction originates in the work of Furstenberg and provides tools to prove rigidity results.

　　A recurrent problem in the field is how to identify this measurable object with a topological boundary. We will develop the theory of Poisson boundaries and discuss how the identification problem is related to geometric properties of the related random walks, such as geodesic tracking.

　　Finally, we will discuss some concrete applications to groups of interest in geometric topology, where the Poisson boundary can be identified with e.g. the Gromov boundary, the visual boundary, or the sub-linearly Morse boundary.

Organizers: Yulan Qing (SCMS); Abdul Zalloum (Queen's University)