Abstract:
The concept of disjointness of dynamical systems (both topological and measure-theoretic) was introduced by Furstenberg in the 60s and has since then become a fundamental tool in dynamics. In this talk, I will discuss disjointness of topological systems of discrete groups. More precisely, generalizing a theorem of Furstenberg (who proved the result for the group of integers), we show that for any discrete group $G$, the Bernoulli shift $2^G$ is disjoint from any minimal dynamical system. This result, together with techniques of Furstenberg, some tools from the theory of strongly irreducible subshifts, and Baire category methods, allows us to answer several open questions in topological dynamics: we solve the so-called “Ellis problem” for discrete groups and characterize the underlying topological space for the universal minimal flow of discrete groups. This is joint work with Eli Glasner, Benjamin Weiss, and Andy Zucker.