

**Speaker:** Ronnie Chen

**Title:** Structurability by contractible simplicial complexes

**Abstract:** In this talk, we will discuss the classes of countable Borel equivalence relations which are structurable by  $n$ -dimensional contractible simplicial complexes, for  $n = 1, 2, \dots, \infty$ . The case  $n = 1$  is the well-studied class of treeable equivalence relations. Generalizing a classical result of Jackson-Kechris-Louveau in the treeable case, we show that for each  $n < \infty$ , there is a constant  $M_n < \infty$  such that every equivalence relation structurable by  $n$ -dimensional contractible simplicial complexes Borel embeds into an equivalence relation structurable by such complexes with the further property that each vertex belongs to at most  $M_n$  edges. Our proof also yields that (for the case  $n = \infty$ ) every countable Borel equivalence relation Borel embeds into an equivalence relation structurable by locally finite contractible simplicial complexes.