

# Algebra and Geometry Seminar

**Speaker:** Christopher Eur (Harvard University)

**Title:** Tautological classes of matroids

**Abstract:** Algebraic geometry has furnished fruitful tools for studying matroids, which are combinatorial abstractions of hyperplane arrangements. We first survey some recent developments, pointing out how these developments remained partially disjoint. We then introduce certain vector bundles (K-classes) on permutohedral varieties, which we call "tautological bundles (classes)" of matroids, as a new framework that unifies, recovers, and extends these recent developments. Our framework leads to new questions that further probe the boundary between combinatorics and geometry. Joint work with Andrew Berget, Hunter Spink, and Dennis Tseng.