國立陽明交通大學應用數學系
演講公告

主講人：Prof. Spencer Backman (美國佛蒙特大學)

講　題：Combinatorial polyhedral geometry of matroids

時　間：115 年 11 月 17 日(星期二) 下午 14:00 –15:00

地　點：(光復校區) 科學一館 213 室

Abstract

A matroid is a rich combinatorial abstraction of the notion of linear independence, and a polytope is the convex hull of finitely many points in a vector space. In the 1970's Edmonds showed how a matroid can be encoded by a distinguished polytope -- this has been explored extensively in the field of combinatorial optimization. In the 2000's Postnikov breathed new life into the subject by viewing such objects as deformations of the permutahedron – the convex hull of all permutations – and studying them from the perspective of algebraic combinatorics. In a related direction, Sturmfels pioneered the tropical geometry of matroids which naturally lives in a space dual to the family of generalized permutahedra. This all culminated in the amazing development of Hodge theory for matroids by June Huh and collaborators which has shed light on many old questions in matroid theory. I will survey the history and development of this area of mathematics, and attempt to emphasize the beautiful interplay between different aspects of the theory.

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