



Department of Mathematics
The Chinese University of Hong Kong

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數學系
香港中文大學

Phone: (852) 3943 7988-9 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk
Rm. 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Representation and Number Theory Seminar

Equivariant Log Concavity in the Cohomology of Configuration Spaces

by

Professor Nicholas Proudfoot
University of Oregon

Abstract

June Huh proved in 2012 that the Betti numbers of the complement of a complex hyperplane arrangement form a log concave sequence. But what if the arrangement has symmetries, and we regard the cohomology as a representation of the symmetry group? The motivating example is the braid arrangement, where the complement is the configuration space of n points in the plane, and the symmetric group acts by permuting the points. I will present an equivariant log concavity conjecture for hyperplane arrangements (or more generally matroids) with symmetries, and show that one can use the theory of representation stability to prove infinitely many cases of this conjecture for configuration spaces.

Date : 7 March 2023 (Tuesday)
Time : 9:00am – 10:00am (Hong Kong Time)
ZOOM Link :
<https://cuhk.zoom.us/j/98406698458?pwd=ejBFQXBTdDU2bTNFZnZhaUJNMHJUdz09>
Meeting ID: 984 0669 8458
Passcode : sesame

All are Welcome