Geometry–Topology Seminar

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will speak on

Combinatorial Representations of Polytopes and Realizability as a Matrix Completion Problem

ABSTRACT: A polytope is a bounded intersection of finitely many half spaces or equivalently the convex hull of finitely many points in Euclidean space. The combinatorial type of a polytope is given by its extreme sets ordered by containment, and an abstract polytope is a poset satisfying certain necessary conditions of combinatorial types. An abstract polytope is realizable when there exists a polytope of that combinatorial type. In this talk we give an alternate representation of abstract polytopes in terms of flags, and reformulate the realizability problem as a matrix completion problem.

Tuesday, 29 September 2009
Lecture at 3:30 pm
Room 617, Wachman Building
Department of Mathematics