Seminar on Combinatorial Computing
March 28, Wednesday, 6:30 p.m.
Room 8405, Graduate Center
365 Fifth Avenue, New York

Counting network flows

Jesus De Loera
Department of Mathematics
University of California at Davis

Abstract

Suppose you have a network with parametric capacities on the arcs and parametric demands on the nodes. It is known that the number of integral flows given by the parameters is in fact a multivariate polynomial, in terms of the capacities and the demands, of degree number arcs - number of nodes - 1. This result is closely related to the geometry and combinatorial properties of the so called flow
polytopes.

In this talk two kinds of results related to these polynomials: 1) we present experimental results on their computation 2) The structure of the chamber complex of flow polytopes. Our results have applications to Statistics and Representation Theory. Joint work with Bernd Sturmfels (UC Berkeley).

For further information contact Janos Pach at pach@cims.nyu.edu, or visit our website: http://www.math.nyu.edu/ pach/combinatorics_seminar.html