Geometry Seminar
March 29, 2005, Tuesday, 6:00 p.m.
Room 613, Courant Institute
251 Mercer Street, New York

Boxes and Voting Paradoxes

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Abstract

A committee of $2k+1$ members has to award fellowships to the top students in the university. To this end, each committee member provides a ranking of all candidates. A student X is considered better than Y, if a majority of the committee members rank X above Y. Having all rankings, the committee members are embarrassed to discover that no matter how they award the fellowships, there will always be a student who didn't get a fellowship but is better than every student who did.

How many fellowships should be awarded to be sure this wouldn't happen? This problem is related to a geometric result of Bárány and Lehel about coverings by axis parallel boxes, and its study leads to an improved version of the geometric statement.

Joint work with G. Brightwell, H. Kierstead, A. Kostochka and P. Winkler.

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