Seminar on Combinatorial Computing
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Room 8405, Graduate Center
365 Fifth Avenue, New York

The beta invariant and antimatroids

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Abstract

The beta invariant is an integer invariant that was originally defined for graphs and matroids by Henry Crapo in the 1960's. We extend his definition to antimatroids, a structure that includes many standard classes within combinatorics. In particular, we examine this invariant for trees, chordal graphs, finite point sets and posets. Free convex sets play a central role in our analysis. For each class, the beta invariant will give us a 'new' formula connecting an alternating sum of free convex sets with some classic invariant. For chordal graphs, this gives the number of blocks, and for finite point sets, it gives the number of interior points. The talk will not assume any background with antimatroids and should be understandable for a general audience.

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