

Combinatorics Seminar

Wednesday, Jan. 14, 2009

3:00 pm in Hume 331

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Deletion-Contraction Polynomials

ABSTRACT

Let M be a matroid with rank function r , and let $e \in E(M)$. The deletion-contraction polymatroid with rank function $f = r_{M \setminus e} + r_{M/e}$ will be denoted $P_e(M)$. The polymatroid $P_e(M)$ is uniquely determined by M and e . Similarly, a deletion-contraction polymatroid determines M , unless e is a loop or coloop. This talk will characterize all polymatroids of this deletion-contraction form by giving the set of excluded minors. Vertigan conjectured that the class of $GF(q)$ -representable deletion-contraction polymatroids is well-quasi-ordered. From this attractive conjecture, both Rota's Conjecture and the WQO Conjecture for $GF(q)$ -representable matroids would follow.