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Jackie Kaminski* (kaminski@math.binghamton.edu), Department of Mathematical Sciences, Binghamton University, PO Box 6000, Binghamton, NY 13902. *Classification of Factored Gain-Graphic Arrangements.*

Determining when an arrangement of hyperplanes is free is a complicated algebraic question, so combinatorial properties and methods are often used to study freeness. One such property is inductive factorization, which implies freeness.

I will introduce arrangements of hyperplanes and a generalization of graphs known as gain-graphs, as well as the notions of factorization and inductive factorization for an arrangement. I will give a classification of all factored gain-graphic arrangements in purely graph theoretic terms, and discuss what remains to be done to extend this classification of factored gain-graphic arrangements to a classification of inductively factored gain-graphic arrangements. (Received December 04, 2012)