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Christine Berkesch* (cberkesc@purdue.edu), Purdue University, Department of Mathematics,
150 North University Street, West Lafayette, IN 47907. *The rank of a hypergeometric system.*

An A -hypergeometric system is a system of PDEs determined by a toric ideal and certain homogeneity parameters. The dimension of its solution space, called its rank, is constant for generic parameters. I will discuss the combinatorial nature of this rank at non-generic parameters and its ties to the local cohomology of the toric algebra with support in the maximal ideal. (Received September 18, 2009)