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Christine Berkesch* (cberkesc@math.purdue.edu), Department of Mathematics, 150 N University Street, Purdue University, West Lafayette, IN 47907. *Rank Jumps of \mathcal{A} -hypergeometric Systems.*

The holonomic rank of the \mathcal{A} -hypergeometric system $H_A(\beta)$ is at least the simplicial volume of $A \subset \mathbb{Z}^d$, with equality for generic parameters $\beta \in \mathbb{C}^d$. The exceptional parameters are given by a subspace arrangement \mathcal{E}_A of \mathbb{C}^d . We introduce another arrangement whose combinatorics determine the rank jump of $H_A(\beta)$ for any β . We will see that $\mathcal{E}_A^i = \{\beta \in \mathbb{C}^d \mid \text{rank } H_A(\beta) - \text{vol}(A) > i\}$ is a union of translates of linear subspaces of \mathbb{C}^d for $i > 0$. (Received February 11, 2008)