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David S. Hough* (hough@gwu.edu), Department of Mathematics, The George Washington University, Washington, DC 20052. *Partitioning the Noncrossing Partition Lattice into Boolean Subposets.*

Simion and Ullman showed how to partition the noncrossing partition lattice into rank-symmetric boolean subposets. We show that this can be done in many ways: two explicit methods are the Simion-Ullman approach and its dual; another is a recursive approach. For the recursive approach to decomposing the noncrossing partition lattice on $\{1, 2, \dots, n\}$, consider the points $1, 2, \dots, n$ drawn in order around a circle. Draw a straight line between i and j for each atom whose sole nonsingleton block is $\{i, j\}$. We show that the largest boolean subposet must be chosen so that the lines representing atoms form a noncrossing spanning tree in the circle; furthermore, any such choice may be extended to a complete decomposition into rank-symmetric boolean subposets. (Received September 28, 2000)