

1116-VW-1476

Ian Nicolas* (nico6473@pacificu.edu), 1509 22nd Ave, Apt 4, Forest Grove, OR 97116, and **Melody Bruce, Michael Dougherty, Max Hlavacek** and **Ryo Kudo**. *A Decomposition of Parking Functions by Undesired Spaces.*

There is a well-known bijection between the set of parking functions of length n (denoted PF_n) and the maximal chains of the lattice formed by the noncrossing partitions on $n + 1$ -elements (denoted NC_{n+1}). Using this bijection we explore a particular decomposition of PF_n and the posets formed by the corresponding maximal chains in NC_{n+1} . We show the these decomposed posets preserve several interesting properties of NC_{n+1} such as self-duality. We also enumerate these decompositions and posets into formulas using the Catalan numbers. In addition, we provide interpretations of this particular decomposition in other objects such as labeled Dyck paths, labeled rooted forests, and nonnesting partitions. (Received September 20, 2015)