ICECA
International Conference
Enumerative Combinatorics and Applications
University of Haifa – Virtual – August 17-19, 2026

A GENERALIZATION OF THE ABSOLUTE ORDER AND OF THE LATTICE OF NONCROSSING PARTITIONS

RICHARD STANLEY

Department of Mathematics, Massachusetts Institute of Technology, USA

The absolute order A_n is a partial ordering of the symmetric group S_n. A permutation v covers u if $v = (i, j)u$ for some transposition (i, j), and if v has one less cycle than u. Thus, A_n has a unique minimal element (the identity permutation) and $(n-1)!$ maximal elements (the n-cycles).

The poset A_n has many interesting algebraic and combinatorial properties. In particular, for any maximal element w, the interval $[id, w]$ is isomorphic to the lattice $NC(n)$ of noncrossing partitions of $\{1, 2, \ldots, n\}$. We will discuss a class of subposets of A_n that have many properties similar to those of A_n.

This talk is based on joint work with John Shareshian and Michelle Wachs.