Promotion, rotation, and a web basis of invariant polynomials from noncrossing partitions

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Abstract

Many combinatorial objects with strikingly good enumerative formulae and dynamical behavior have underlying algebraic meaning. We first review classical results on promotion of standard Young tableaux, rotation of matchings/webs, and related invariant polynomials and symmetric group actions. We then discuss recent joint work with Rebecca Patrias and Oliver Pechenik involving the more general setting of increasing tableaux and noncrossing partitions.

Keywords: Young tableaux, invariant polynomial, group action, noncrossing partition.