Refined dual stable Grothendieck polynomials and generalized Bender-Knuth involutions

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Abstract

The dual stable Grothendieck polynomials are a deformation of the Schur functions, originating in the study of the K-theory of the Grassmannian. We generalize these polynomials by introducing a countable family of additional parameters such that the generalization still defines symmetric functions. We outline two self-contained proofs of this fact, one of which constructs a family of involutions on the set of reverse plane partitions generalizing the Bender-Knuth involutions on semistandard tableaux, whereas the other classifies the structure of reverse plane partitions with entries 1 and 2.

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