

**A NONSYMMETRIC VERSION OF OKOUNKOV'S
BC-TYPE INTERPOLATION MACDONALD
POLYNOMIALS**

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ABSTRACT

In 1998 Okounkov introduced BC-type interpolation Macdonald polynomials. These are symmetric Laurent polynomials which are determined, up to a constant factor, by their vanishing on interpolation points which depend on q and two additional parameters s and t . He also showed that Macdonald-Koornwinder polynomials can be explicitly expanded in terms of products of two such interpolation polynomials, one in the variable and one in the dual variable. This so-called binomial formula specializes in the one-variable case to the usual q -hypergeometric expression for Askey-Wilson polynomials. Furthermore, Okounkov's polynomials allow extra-vanishing, i.e., they vanish not just on the interpolation points, but also on an additional explicit point set.

The talk presents work joint with Disveld and Stokman (see arXiv:1808.01221, to appear in *Transf. Groups*) where we introduce a nonsymmetric version of Okounkov's polynomials. These are Laurent polynomials (no longer symmetric) characterized by their vanishing on interpolation points. The symmetric Okounkov polynomials can be expressed as a sum over the Weyl group for BC_n of the nonsymmetric polynomials. The existence proof of the nonsymmetric polynomials is by a nested induction process.

If time permits, I will report at the end of the talk about work in progress on problems left open by our paper, such as extra-vanishing of the nonsymmetric polynomials, for which we have experimental indications.

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