

Specialized Macdonald polynomials, quantum K-theory, and
Kirillov-Reshetikhin modules
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The (symmetric) Macdonald polynomials are Weyl group invariant polynomials with rational function coefficients (in q, t), which specialize to the irreducible Lie algebra characters upon setting $q = t = 0$. Quantum K -theory is a K -theoretic generalization of quantum cohomology. Kirillov-Reshetikhin (KR) modules are certain finite-dimensional modules for affine Lie algebras. Braverman and Finkelberg related the Macdonald polynomials specialized at $t = 0$ to the quantum K -theory of flag varieties. With S. Naito, D. Sagaki, A. Schilling, and M. Shimozono, we proved that the same specialization of Macdonald polynomials equals the graded character of a tensor product of (one-column) KR modules. I will discuss the combinatorics underlying these connections.