

SIDE 14.2



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Fermionic description of K-theoretic symmetric functions of type A and C

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Content :

The term "K-theoretic symmetric function" refers to a family of symmetric functions representing Schubert varieties in the K-theory of flag varieties. (They are referred to as "Grothendieck polynomials" for type A and as "K-Q-functions" for type C.) In this talk, I will introduce a fermionic description of these K-theoretic symmetric functions in terms of the boson-fermion correspondence. This method generalizes the vertex operator presentation of Schur polynomials, which has been studied intensively in the field of classical integrable systems, particularly the KP equation. This characterization provides a unified approach for proving algebraic formulas, such as determinant formulas, Schur expansions, and plethysm. Additionally, I will introduce the 'K-theoretic non-commutative Schur operators,' which naturally act on the space of Grothendieck polynomials.

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