

Finite Gröbner bases for quantum symmetric groups

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Non-commutative Gröbner bases of two-sided ideals are not necessarily finite. Motivated by this, we provide a closed-form description of a finite and reduced Gröbner bases for the two-sided ideal used in the construction of Wang's quantum symmetric group. This extends the computational toolset for research on quantum symmetric groups, quantum automorphism groups of graphs, matroids and other combinatorial structures. We provide an implementation in the computer algebra system OSCAR. This talk is based on joint work with Marcel Wack.