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Rational Schur algebras

This is joint work with R. Dipper and F. Stoll. Rational Schur algebras are a new family of quasihereditary algebras depending on 3 parameters; when one of the parameters is set to zero the classical Schur algebras are recovered as a special case. Rational Schur algebras control the rational representation theory of general linear groups over an infinite field, and there is a Schur-Weyl duality involving "mixed" tensor powers of the natural representation and its dual. The centralizer algebra is a nice subalgebra of the Brauer algebra described by certain "walled" Brauer diagrams. Of course, there are q -analogues of everything.