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Stratified algebras and representations of finite groups of Lie type

The notion of stratified algebras was introduced by Cline, Parshall and Scott (see [1]) in order to deal with certain endomorphism algebras used in the representation theory of finite groups of Lie type. In this talk, I am going to survey some of the developments on this subject with emphasizes on the construction of stratifications and standard stratifications for Hecke endomorphism algebras ([2], [3]) and their potential applications to the representations of finite groups of Lie type in non-defining characteristic. If time permits, I will also talk about the relation between the local and global structures of these algebras ([4]).

References

[1] E. Cline, B. Parshall and L. Scott, Stratifying endomorphism algebras, Memoirs Amer. Math. Soc., 591 (1996).

[2] J. Du, B. Parshall and L. Scott, Stratifying endomorphism algebras associated to Heck endomorphism algebras, J. Algebra, 203 (1998) 169-210.

[3] J. Du and L. Scott, Stratifying q-Schur algebras of type D, Proc. of ICRT, Shanghai (2000) 167-198.

[4] J. Du and Z. Lin, Stratifying algebras with near-matrix algebras, Preprint, 2001.