

Title: Stratifications of Khovanov-Lauda-Rouquier algebras and RoCK blocks of Hecke algebras

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Abstract: We review standard module theory for KLR algebras of finite and affine types, its connections with PBW bases in quantum groups, and affine highest weight categories. We give an applications to blocks of symmetric groups and Hecke algebras: we describe the blocks up to derived equivalence as certain explicit Turner double algebras. Turner doubles are Schur-algebra-like 'local' objects, which replace wreath products of Brauer tree algebras in the context of the Broué abelian defect group conjecture for blocks of symmetric groups with non-abelian defect groups. The latter result is joint with Anton Evseev.