

Insalate di Matematica

presents

Blocks of Ariki-Koike algebras

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U5 - Room 3014 and
Google Meet meeting

Università di Milano Bicocca

Abstract

Representations of the symmetric group are quite well understood, mainly thanks to a constructive approach given by James who developed the use of combinatorial tools, such as diagrams, tableaux and abacuses. This approach can be generalised to give techniques for studying representations of related algebras including the Hecke algebras of type A and the Ariki-Koike algebras.

We consider representations of the Ariki-Koike algebra, a q -deformation of the group algebra of the complex reflection group $C_r \wr S_n$. The representations of this algebra are naturally indexed by multipartitions of n . We examine blocks of the Ariki-Koike algebra, in an attempt to generalise the combinatorial representation theory of the Iwahori-Hecke algebra. In particular, we prove a sufficient condition such that restriction of modules leads to a natural correspondence between the multipartitions of n whose Specht modules belong to a block B and those of $n - \delta_i(B)$ whose Specht modules belong to the block B' , obtained from B applying a Scopes equivalence.



Keywords:

symmetric group · Ariki-Koike algebra · representation theory ·
combinatorics · abacus · block

"Obvious" is the most dangerous word in mathematics. - Eric Temple Bell

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