ALGEBRA SEMINARS

A conjecture on the module structure of the source algebra of a block

By

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Abstract: A p-block B of the finite group G gives rise to a saturated fusion system on its defect group D. As B is a p-permutation D-algebra, it also possesses a linear basis that is closed under the left and right multiplicative actions of D; this basis is well-defined as a (D, D)-biset. One might ask if this biset is characteristic for the block fusion system, but the answer unfortunately turns out to be no.
However, there is another algebra we might consider:
The block algebra also gives rise to the source algebra S, smaller but with the same representation theory. The algebra S is also a p-permutation (D, D)-algebra, and it is an open question whether a (D, D)-invariant basis of S is characteristic for the block fusion system.
In this talk, representing joint work with Laurence Barker, I will explain how the affirmative answer is implied by another conjecture, namely, that S has a (D,D)-invariant basis consisting of units. I will then outline several equivalent reformulations of the latter conjecture.

Date: February 11, 2019
Time: 10:40 – 11:50
Place: SA141 Mathematics Seminar Room

* Tea and cookies will be served before the talk. All are most cordially invited.