

SOME QUESTIONS ON PRINCIPAL BLOCKS FOR DIFFERENT PRIMES

If p and q are different primes and G is a finite group, it is not generally reasonable to expect meaningful interactions between the p -representation theory of G and its q -representation theory. However there are some exceptions, specially when we deal with principal blocks. For instance, if $B_p(G)$ denotes the principal p -block of G , in [BNOT] it is proved that $\text{Irr}(B_p(G)) = \text{Irr}(B_q(G))$ if and only if p and q do not divide $|G|$. Another nice interaction between $B_p(G)$ and $B_q(G)$ is studied in [MN20] and [LWWZ], where the authors prove a version of Brauer's Height Zero conjecture for principal blocks and two primes.

In this talk we give an overview of this kind of results and we propose some problems involving principal blocks for different primes.

REFERENCES

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