Normal Supercharacter Theory

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Résumé

There are three main constructions of supercharacter theories for a group G. The first, defined by Diaconis and Isaacs, comes from the action of a group A via automorphisms on our given group G. Another general way to construct a supercharacter theory for G, defined by Diaconis and Isaacs, uses the action of a group A of automor- phisms of the cyclotomic field Q[ζ—G—]. The third, defined by Hendrickson, is combining a supercharacter theories of a normal subgroup N of G with a supercharacter theory of G/N . In this paper we construct a supercharacter theory from an arbitrary set of normal subgroups of G. We show that when we consider the set of all normal subgroups of G, the corresponding supercharacter theory is related to a partition of G given by certain values on the central primitive idempotents. Also, we show the supercharacter theories that we construct can not be obtained via automorphisms or a single normal subgroup.

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