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Irreducible Characters of the Generalized Symmetric Group

We study how to compute irreducible characters of the generalized symmetric group $C_k \wr S_n$ by iterative algorithms. After proving the Ariki-Koike version of the Murnaghan-Nakayama rule by vertex algebraic method, we formulate a new iterative formula for characters of the generalized symmetric group. As application we find a numerical relation between the character values of $C_k \wr S_n$ and modular characters of S_{kn}.

Keywords: Murnaghan-Nakayama rule, generalized symmetric groups, vertex operators.

MSC: 20C08, 05E10, 17B69.