Bonnafé, Cédric

Constructible characters and b-invariant. (English) Zbl 1328.20008

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Summary: If W is a finite Coxeter group and φ is a weight function, Lusztig has defined φ-constructible characters of W, as well as a partition of the set of irreducible characters of W into Lusztig φ-families. We prove that every Lusztig φ-family contains a unique character with minimal b-invariant, and that every φ-constructible character has a unique irreducible constituent with minimal b-invariant. This generalizes Lusztig's result about special characters to the case where φ is not constant. This is compatible with some conjectures of Rouquier and the author about Calogero-Moser families and Calogero-Moser cellular characters.

MSC:

20C08 Hecke algebras and their representations
20F55 Reflection and Coxeter groups (group-theoretic aspects)

Keywords:

finite Coxeter groups; b-invariants; constructible characters; cellular characters; Lusztig families; irreducible constituents

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