Oberseminar

zur

Algebra und Algebraischen Kombinatorik

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"$U_n(q)$ acting on λ-flags"

Diaconis and Isaacs generalized André-Yan's supercharacter theory to arbitrary $\mathbb{F}_q$-algebra groups, where $\mathbb{F}_q$ is the finite field with q elements. Le reduced the question of decomposing supercharacters of $U_k(q)$ into irreducibles to the decomposition of certain monomial representations of $\mathbb{F}_q$-algebra groups, (indeed pattern subgroups), $U^w \cap U$, $U = U_n(q)$, where w is an element of the symmetric group $\mathfrak{S}_n$ and $n < k$. This brings into focus the study of monomial representations of pattern subgroups of the form $U^w \cap U$.

In this talk we generalize the construction of monomial $U^w \cap U$-representations affording supercharacters using a construction introduced by Jedlitschky. More precisely, if λ is a composition of n we consider the action of U on the set of λ-flags in the natural $GL_n(q)$-module $\mathbb{F}_q^n$. This splits by Mackey decomposition naturally into direct summands labelled by the distinguished coset representatives of $\mathfrak{S}_\lambda$ in $\mathfrak{S}_n$. We monomialize the component belonging to the distinguished coset representative $w \in \mathfrak{S}_n$ as $U^w \cap U$-module. In general the component decomposes then into many orbit modules.

This is a joint work with Richard Dipper.

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ab 14:15 Uhr, Raum a410
Hauptgebäude der Leibniz Universität Hannover
Alle Interessierten sind herzlich eingeladen.

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