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"Representations of the Brauer algebra and Littlewood's restriction rules"

ABSTRACT

Let G be either $Sp(V)$ or $O(V)$. Using an action of the Brauer algebra, we describe the subspace $T^k(V^{\otimes m}) \subseteq V^{\otimes m}$ of tensors of valence k as an induced representation. As an application, we recover a special case of Littlewood's restriction rule, affording the decomposition of an irreducible $GL(V)$–module when restricted to G. Moreover we get an explicit realization of the irreducible representations of the Brauer algebra.

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