

1116-16-846

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We provided a diagrammatic description of the endomorphism algebras of the tensor powers of the natural representation for the type P Lie superalgebras. Our description naturally generalizes Brauer's classic work on the same question for the orthogonal and symplectic groups. It also provides transparent explanations and generalizations of earlier results of Moon. Furthermore, it naturally extends to a diagrammatic model category which combinatorially describes the full subcategory given by the tensor powers. (Received September 14, 2015)