Abstract

For any partition, the corresponding Specht module is the sub module of permutation module spanned by the poly-tabloids. The Specht modules for a partition of a positive integer n form a complete list of irreducible representations of permutation group of degree n. The Semi-Standard Young Tableau (SSYT), on n-symbols are one type of combinatorial objects occur naturally in many computational problems in Science, Engineering and Technology, which have one-to-one correspondence with Gelfand–Tzetlin bases set of the Unitary group U(n). In this paper, we propose a method to construct character table of permutation group of degree n using Specht module and Semi Standard Young Tableaux. This method is illustrated with an example using a partition of degree 5 in permutation group S5.

References

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**Index Terms**

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**Keywords**

Permutation group; Partition; Young Tableaux; Semi Standard Young Tableaux; Permutation Module; Specht Module