## عنوان مقاله:

${The Maschke property for the Sylow $p$-sub\-groups of the symmetric group $S_{p^n

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## خلاصه مقاله:

In this paper we prove that the Maschke property holds for coprime actions on some important classes of $p$-groups like: metacyclic $p$-groups, $p$-groups of $p$-rank two for $p>۳$ and some weaker property holds in the case of regular $p$-groups. The main focus will be the case of coprime actions on the iterated wreath product $P_n$ of cyclic groups of order $p$, i.e. on Sylow $p$-subgroups of the symmetric groups $S_{p^n}$, where we also prove that a stronger form of the Maschke property holds. These results contribute to a future possible classification of all $p$-groups with the Maschke property. We apply these results to describe which normal partition subgroups of $P_n$ have a complement. In the end we also describe abelian subgroups of $P_n$ of largest size.

## کلمات کلیدی:

Maschke's Theorem, coprime action, Sylow $p$-subgroup of symmetric group, iterated wreath product, uniserial action

## لینک ثابت مقاله در پایگاه سیویلیکا:

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