

Kantor, William M.

Finding Sylow normalizers in polynomial time. (English) Zbl 0731.20005
J. Algorithms 11, No. 4, 523-563 (1990).

Let G be a subgroup of S_n , the symmetric group on n points. In continuation of his previous articles on polynomial-time algorithms for finding Sylow p -subgroups of G the author shows in the present paper that there exists also a polynomial-time algorithm for given prime p which finds the normalizer $N_G(P)$ of a Sylow p -subgroup P of G . This is done by polynomial-time reducing the problem to an algorithm called SIMPLENORMALIZER. It deals with simple factors of G , also in polynomial time. In particular, in the case where G is solvable the author generalizes this result to Hall π -subgroups for a set of primes π .

Reviewer: I.Janiszczak (Essen)

MSC:

20B40 Computational methods (permutation groups) (MSC2010)
20D20 Sylow subgroups, Sylow properties, π -groups, π -structure
20B35 Subgroups of symmetric groups
68Q25 Analysis of algorithms and problem complexity

Cited in **2** Reviews
Cited in **1** Document

Keywords:

symmetric group; polynomial-time algorithms; Sylow p -subgroups; normalizer; simple factors; Hall π -subgroups

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