

p -groups of supersolvable type*

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Abstract

Let S be a p -group for some prime p . A fusion system \mathcal{F} over S is called supersolvable if there exists a series $1 = S_0 \leq \dots \leq S_m = S$ of subgroups of S such that S_i is strongly closed in S with respect to \mathcal{F} and S_{i+1}/S_i is cyclic for each i . A p -group S is said to be of supersolvable type if \mathcal{F} is supersolvable for any saturated fusion system \mathcal{F} over S . Equivalently, every saturated fusion system \mathcal{F} over S can be realized by a p -supersolvable group. In our paper, we present an equivalent description on p -groups of supersolvable type. As applications, we give a complete characterization of p -group of supersolvable type within the class of abelian p -groups and the class of meta-cyclic p -groups.

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