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ON THE FINITE PRIME SPECTRUM MINIMAL GROUPS

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Let G be a finite group. The set of all prime divisors of the order of G is called the prime spectrum of G and is denoted by $\pi(G)$. A group G is called prime spectrum minimal if $\pi(G) \neq \pi(H)$ for any proper subgroup H of G. We prove that every prime spectrum minimal group all whose non-abelian composition factors are isomorphic to the groups from the set $\{PSL_2(7), PSL_2(11), PSL_5(2)\}$ is generated by two conjugate elements. Thus, we expand the correspondent result for finite groups with Hall maximal subgroups. Moreover, we study the normal structure of a finite prime spectrum minimal group which has a simple non-abelian composition factor whose order is divisible by 3 different primes only.

Keywords: finite group, generation by a pair of conjugate elements, prime spectrum, prime spectrum minimal group, maximal subgroup, composition factor.

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