# Some simple groups which are determined by their character degree graphs

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Let $G$ be a finite group and let $\rho(G)$ be the set of prime divisors of the irreducible character degrees of $G$. The character degree graph of $G$, denoted by $\Delta(G)$, is a graph with vertex set $\rho(G)$ and two vertices $a$ and $b$ are incident in $\Delta(G)$, if $ab$ divides some irreducible character degree of $G$. Many researchers try to know the properties of $\Delta(G)$. For example, in [2] and [3], it was shown that for every group $G$, diameter of $\Delta(G)$ is at most 3. Also, authors in [4] showed that if $G$ is a finite simple group, then $\Delta(G)$ is connected unless $G \cong PSL(2, q)$. There are many characterizations of finite groups. In [1], Khosravi and et al. introduced a new characterization of finite groups based on the character degree graph as if $G$ has the same order and the character degree graph as that of a certain group $M$, then $G \cong M$. Khosravi and et al., in [1], proved that the groups of orders less than 6000 are uniquely determined by their character degree graphs and orders. In this talk, we are going to show that some simple groups are uniquely determined by their orders and character degree graphs.

## References

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