

Skew-morphisms of nonabelian characteristically simple groups

Speaker: Jiyong Chen
Southern University of Science and Technology

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Abstract: A skew-morphism of a finite group G is a permutation σ on G fixing the identity element, and for which there exists an integer function π on G such that $\sigma(xy) = \sigma(x)\sigma^{\pi(x)}(y)$ for all $x, y \in G$. This concept was given by Robert Jajcay when considering the orientably regular embeddings of a Cayley graph of G . It has been known that given a skew-morphism σ of G , the product of $\langle \sigma \rangle$ with the left regular representation of G forms a permutation group on G , called the skew-product group of σ . In this talk, I will show a new characterization of the skew-product groups for all skew-morphisms of finite nonabelian characteristically simple groups. This is a joint work with Shaofei Du and Cai Heng Li.