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ON A CONJECTURE OF ZIMMERMAN ABOUT AUTOMORPHISMS OF S_n

Abstract

All groups considered are finte. For a group G and $\alpha \in Aut(G)$, we set

$$S(G, \alpha) = \{g \in G | g\alpha = g^2\}$$

We let $s(G, \alpha) = \dfrac{|S(G, \alpha)|}{|G|}$ and define the function $s(G)$ by $s(G) = \max\limits_{\alpha \in Aut(G)} s(G, \alpha)$ we calculate for the permutation group S_n.