

INSALATE DI MATEMATICA

presents

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MARCO FUSARI

Università degli Studi di Milano-Bicocca

Cliques in derangement graphs



Abstract:

Given a permutation group G , the derangement graph ΓG of G is the Cayley graph with connection set the derangements of G . In a recent paper of 2021 Meagher, Razafimahatratra and Spiga conjectured that there exists a function $f : \mathbb{N} \rightarrow \mathbb{N}$ such that, if G is transitive of degree n and ΓG has no k -clique, then $n \leq f(k)$. The conjecture has been proved for innately transitive groups, that are a generalization of primitive groups. Motivation for this work arises from investigations on Erdos-Ko-Rado type theorems for permutation groups.

Keywords: Group theory · Permutation group · Combinatorics · Graph theory

Dipartimento di Matematica e Applicazioni
Università degli Studi di Milano-Bicocca

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*"Obvious" is the most dangerous word in mathematics.
(Eric Temple Bell)*