Unstable circulant graphs of twice prime power order

István Kovács

University of Primorska (Slovenia)

(Joint work with A. Hujdurović)

A graph Γ is called unstable if for the direct product $\Gamma \times K_2$, $\mathrm{Aut}(\Gamma \times K_2)$ is not isomorphic to $\mathrm{Aut}(\Gamma) \times \mathbb{Z}_2$, and it is called circulant if it admits an automorphism permuting the vertices in a full cycle. The study of unstabe circulant graphs was initiated by Wilson [6]. A characterization of the unstable circulant graphs of order n and valency k is known only in special cases: n is odd [1, 5], $n = 2p$ for a prime p [3] and $k \leqslant 7$ [4]. In the talk we present a characterization in the case when the order $n = 2p^e$ for an odd prime p and $e \geqslant 1$.

References

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