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DISTINGUISHING INDEX OF $K_{1,s}$ -FREE GRAPHS - NEW RESULTS AND GENERALIZATIONS

The distinguishing index $D'(G)$ of a graph G is the smallest number k such that G has an edge- k -colouring breaking all nontrivial automorphisms of G . The parameter was first defined by Kalinowski and Pilśniak in 2015; they proved that in general, with exception of certain small cycles, there is $D'(G) \leq \Delta(G)$. For $K_{1,s}$ -free graphs it is possible to obtain a better bound. In [1] there was proved that for connected, $K_{1,s}$ -free graphs such that $|G| \geq 6$ the distinguishing index is bounded by $s - 1$. In this talk, we present further improvement of this bound and other possible generalisations of the result.

This is joint work with Christoph Brause, and Aleksandra Gorzkowska.

References

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- [2] R. Kalinowski, and M. Pilśniak, *Distinguishing graphs by edge colourings*, European Journal of Combinatorics 45, 2015, pp. 124–131.
- [3] J. Kwaśny, and M. Stawiski, *List distinguishing index of graphs*, Ars Mathematica Contemporanea, 2026, <https://doi.org/10.26493/1855-3974.3536.fc8>.