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Graphs with small distinguishing index

\titleoftalk{Graphs with small distinguishing index}
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\begin{abstract}The distinguishing index of˜a graph G, denoted by $D'(G)$, is the˜least number of˜colours in a general edge colouring of˜G not preserved by any non-trivial automorphism. The definition of˜$D'(G)$ was introduced in 2015 in [3] as an analogue of the distinguishing number defined by Albertson and Collins for vertex colouring, the concept of which spawned more than a hundred of papers.
For connected graphs in general, we showed in [3] that $D'(G) \leq \Delta(G)$ unless G is C_3, C_4 or C_5. It was proved in [5],
that the equality $D'(G) = \Delta(G)$ holds only for cycles of˜length at least 6, for K_4, $K_{3,3}$ and for all symmetric and bisymmetric trees, i.e., $D'(G) < \Delta(G)$ for all other connected graphs.
%\vspace{.3cm}

Interestingly, there are some wide classes of graphs with the distinguishing index bounded by a small constant, e.g., traceable graphs, planar graphs, claw-free graphs [5], Cartesian powers [2], and the Cartesian product of denumerable graphs [1].
\vspace{0.3cm}

An analogous concept was also investigated for proper total colourings in [4]. We
proved in particular that if G is a˜connected graph such that its total chromatic index $\chi''(G)$ satisfies $\chi''(G) \geq \Delta(G) + 2$, then the total distinguishing chromatic index equals $\chi''(G)$.

\vspace{25pt}

\setlength{\parindent}{0cm}{\textbf{References:}
% Journal paper

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\end{abstract}

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