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A note on interval colourings of graphs

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A graph is said to be *interval colourable* if it admits a proper edge-colouring using palette $\mathbb{N}$ in which the set of colours incident to each vertex is an interval. This definition was first introduced by Asratian and Kamalian in 1987 and has close relationships with scheduling problems in theoretical computer science. The *interval colouring thickness* of a graph G is the minimum k such that G can be edge-decomposed into k interval colourable graphs. We show that $\theta(n)$, the maximum interval colouring thickness of an n-vertex graph, satisfies $\theta(n) = \Omega(\log(n)/\log\log(n))$ and $\theta(n) \leq n^{5/6+o(1)}$, which improves on the trivial lower bound and an upper bound of the first author and Zheng. As a corollary, we answer a question of Asratian, Casselgren, and Petrosyan and disprove a conjecture of Borowiecka-Olszewska, Drgas-Burchardt, Javier-Nol, and Zuazua. We also confirm a conjecture of the first author that any interval colouring of an n-vertex planar graph uses at most $3n/2 - 2$ colours. We will then discuss further results and directions of work.