

Partitioning 2-edge-coloured graphs into monochromatic cycles

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In 2019, Letzter confirmed a conjecture of Balogh, Barát, Gerbner, Gyárfás and Sárközy, proving that every large 2-edge-coloured graph G on n vertices with minimum degree at least $3n/4$ can be partitioned into two monochromatic cycles of different colours. Here, we propose a weaker condition on the degree sequence of G to also guarantee such a partition and prove an approximate version. Continuing work by Allen, Böttcher, Lang, Skokan and Stein, we also show that if $\deg(u) + \deg(v) \geq 4n/3 + o(n)$ holds for all non-adjacent vertices $u, v \in V(G)$, then all but $o(n)$ vertices can be partitioned into three monochromatic cycles.