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*Partitioning graphs via edge-coloured homomorphisms*

Graph homomorphisms give structure to a large class of graph partition problems. However, many problems do not obviously have a homomorphism model. The *monopolar partition problem*, for example, asks whether the vertices of a graph can be partitioned into an independent set and an induced  $P_3$ -free subgraph. We relate monopolar partitions to certain edge-coloured homomorphisms, giving an efficient solution in restricted classes including claw-free, chordal, and co-comparability graphs.