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The complexity of graph recoloring and reconfigurations

The fundamental question addressed is as follows: given a two colourings of graph, is it possible to change the first into the second by successively recolouring one vertex at a time (and maintaining a proper colouring throughout the process)? For k -colourings Cereceda, van den Heuvel, and Johnson proved this problem is polynomial time solvable for k at most 3, whereas Bonsma and Cereceda have shown for k at least 4 the problem is PSPACE-complete. We examine this topic, as well as the question of when the answer is YES for any two colourings, with a particular focus on circular (p, q) -colourings.