

The Reconfiguration Graph for Vertex Parameters

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Reconfiguration studies the transformation of one feasible solution to a problem into another by a series of incremental steps governed by the reconfiguration rule while requiring each intermediate step to also be a feasible solution. Given a graph G and a property x that is possessed by subsets of the vertex set of G , the vertices of the reconfiguration graph are sets with property x . Two sets are connected by an edge if one can be transformed into the other by one application of the reconfiguration rule. Three rules have been extensively studied in the literature: Token Addition and Removal (TAR), Token Jumping (TJ) and Token Sliding (TS). The structure of the reconfiguration graphs for domination, variants of zero forcing, vertex covers and independent sets have common properties irrespective of the parameter studied. In this talk I will survey the current work on framing the reconfiguration problem for vertex parameters in a universal setting.

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