

Rainbow Hamiltonian-Connected Graphs

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A graph G is Hamiltonian-connected if every pair of vertices of G are connected by a Hamiltonian path that contains every vertex of G . A graph is edge-colored if each of its edges is assigned a color where adjacent edges can be assigned the same color. A path P in an edge-colored graph is a rainbow path if no two edges of P are colored the same. An edge coloring of a Hamiltonian-connected graph G is a Hamiltonian-connected rainbow coloring if every two vertices of G are connected by a rainbow Hamiltonian path. The minimum number of colors in a Hamiltonian-connected rainbow coloring of G is the rainbow Hamiltonian-connection number of G . We present recent results as well as open questions in this area of research.

Keywords: rainbow coloring, Hamiltonian-connected graph.