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Optimal unavoidable sets of types of 3-paths for plane graphs with minimum degree 2

A 3-path of type (i, j, k) is a path uvw on three vertices u, v , and w such that the degree of u (resp. v , resp. w) is at most i (resp. j , resp. k). The elements i, j, k are called *parameters* of the type. The set S of types of paths is *optimal unavoidable* for a family \mathcal{F} of graphs if each graph G from \mathcal{F} contains a path of the type from S , and neither any type can be omitted from S , nor any parameter of any type from S can be decreased.

In the talk we present the unavoidable sets of types of 3-paths for the family of plane graphs having $\delta(G) \geq 2$ and $g(G) \geq 4$. For some values of girth we give two mutually incomparable optimal unavoidable sets of types of 3-paths.