Nonseparating paths in spanning trees

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Resumo

We consider questions related to the existence of spanning trees
in graphs with the property that after the removal of any path in
the tree the graph remains connected. We show that, for planar
graphs, the existence of trees with this property is closely related to
the Hamiltonicity of the graph. For graphs with a 1- or 2-vertex cut,
the Hamiltonicity also plays a central role. We also deal with span-
ning trees satisfying this property restricted to paths arising from
fundamental cycles. The cycle space of a graph can be generated
by the fundamental cycles of any spanning tree, and Tutte showed,
that for a 3-connected graph, it can be generated by nonseparating
cycles. We are also interested in the existence of a fundamental basis
consisting of nonseparating cycles.