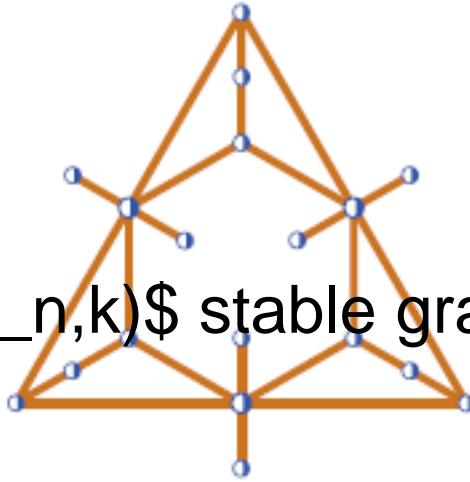


Bled'11 - 7th Slovenian International Conference on Graph Theory

Contribution ID : 114

(K_n, k) stable graphs



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{$(K_n,k)$ stable graphs}
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(Joint work with J.-L. Fouquet, H. Thuillier and J.-M. Vanherpe)}
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Let H be a simple graph.

A graph G is called to be (H, k) stable if it contains a subgraph isomorphic to H after deletion of any subset of k vertices.

The edge version of the problem was considered first (for H being paths) by Frankl, Katona and Horvath.

The notion of (H, k) stable graphs is relatively new, but there are already several results concerning it. Particularly interesting is the problem of finding the minimum size $\text{stab}(H, k)$ of a (H, k) stable graph and characterizing all the (H, k) stable graphs with the minimum size. There are already known some results concerning (H, k) stable graph when H is a bipartite graph (and $k=1$), when H is a star (for any k) and when H is a cycle C_n (exact result for $k=1$ and upper and lower bounds for any k).

We solve this problem when H is the complete graph K_n and either $n \leq 5$ (k arbitrary) or else, if $6 \leq n \leq \frac{k}{2} + 1$.

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Session classification : --not yet classified--

Track classification : General session

Type : Oral presentation