

Lubomír Šoltés

Neighborhoods in line graphs

Acta Universitatis Carolinae. Mathematica et Physica, Vol. 31 (1990), No. 2, 105

Persistent URL: <http://dml.cz/dmlcz/701961>

Terms of use:

© Univerzita Karlova v Praze, 1990

Institute of Mathematics of the Academy of Sciences of the Czech Republic provides access to digitized documents strictly for personal use. Each copy of any part of this document must contain these *Terms of use*.



This paper has been digitized, optimized for electronic delivery and stamped with digital signature within the project *DML-CZ: The Czech Digital Mathematics Library* <http://project.dml.cz>

Neighborhoods in Line Graphs

E. ŠOLTÉS*)

Czechoslovakia

Received 11 March 1990

All graphs are finite, without loops and multiple edges.

If v is a nonisolated vertex of a graph then the *neighbourhood of v* is the subgraph of G induced by the set of vertices adjacent to v . If the neighbourhood of every vertex is isomorphic to a given graph H then G is called *locally H graph*.

Theorem. *Let H be a graph. Then either all locally H graphs are line graphs or none.*

Moreover the first case holds if H is a complete graph or the union of two complete graphs or the union of two copies of the same complete graphs together with some independent edges joining them.

Problem. Are there such graphs G and H with common vertex set that the neighbourhood of each vertex in graph G is isomorphic to its neighbourhood in a graph H , and G is a line graph while H not?

*) KNOM MFF UK, Mlynská Dolina, 842 15 Bratislava, Czechoslovakia