



universität
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Fakultät für Mathematik

Mathematisches Kolloquium

Mittwoch, 9. Mai 2018

Sky Lounge

EINLADUNG

Josef Schicho

(Universität Linz)

"Moving Graphs"

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Abstract:

Given a graph $G=(V,E)$ whose vertices are points in the plane and whose edges are straight line segments (crossings allowed), we ask whether it is possible to move the points in the plane so that all edge lengths are preserved. If $|E|<2|V|-3$, then the answer is yes for generic positions of the vertices.

A necessary and sufficient condition for the property of a graph that a generic positioning is moving has been given 1927 by H. Pollaczek Geiringer; this result has been rediscovered by G. Laman in 1970. But even if a graph is generically rigid, then it may move in special positions. A classical construction by A. Dixon from 1899 works for all bipartite graphs. In this talk, we give a combinatorial criterion for the existence of an assignment to edge lengths by positive numbers allowing motion and discuss some new examples.

15.45 Uhr: Kaffeejause

16.15 Uhr: Vortrag

vinum cum pane im Anschluss

Herwig Hauser
Christian Krattenthaler