

Oddział Łódzki PTM serdecznie zaprasza

na wykład

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pod tytułem

Recognizing HH-free and HHD-free graphs

który odbędzie się

w dniu 21 maja 2019 roku (wtorek) o godz. 12.15

w sali D103 WMiI UŁ

Abstrakt

In this talk, we consider the recognition problem for the classes of HH-free and HHD-free graphs. A graph is HH-free if it contains no induced subgraph isomorphic to a “house” or a “hole”, whereas an HHD-free graph is an HH-free graph that contains no induced “domino”. First, we will exhibit properties of the chordal completion of a graph and will describe a modified version of the well known linear-time algorithm to test for a perfect elimination ordering which we use to recognize if a graph on n vertices and m edges is HH-free in $O(\min\{nm a(n), nm + n^2 \log n\})$ time and $O(n + m)$ space. This algorithm implies an HHD-free recognition algorithm with the same time and space complexity. Next, we will present an improved algorithm for recognizing HHD-free graphs which takes $O(nm)$ time and $O(n + m)$ space. Both algorithms can be augmented to provide a certificate (an induced house, hole, or domino) whenever they decide that the input graph is not HH-free or HHD-free. The certificate computation requires $O(n + m)$ additional time and $O(n)$ space.

This is joint work with Stavros D. Nikolopoulos, University of Ioannina, Greece.