
GWENAËL JORET, Université Libre de Bruxelles
Sparse universal graphs for planarity

This talk focuses on the following two problems:

(1) What is the minimum number of edges in a graph containing all n -vertex planar graphs as subgraphs? The best known bound is $O(n^{3/2})$, due to Babai, Chung, Erdős, Graham, and Spencer (1982).

(2) What is the minimum number of *vertices* in a graph containing all n -vertex planar graphs as *induced* subgraphs? Here Bonamy, Gavoille, and Pilipczuk (2019) recently established a $O(n^{4/3})$ bound.

We show that a bound of $n^{1+o(1)}$ can be achieved for these two problems. Joint work with Vida Dujmović, Louis Esperet, Cyril Gavoille, Piotr Micek, and Pat Morin.