Institut für Diskrete Mathematik

Combinatorics Seminar

05.12.2025, 12:30

Online meeting (Webex) & AE06, Steyrergasse 30

Directed tree-cutwidth and immersions

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The first major step towards the graph minor structure theorem by Robertson and Seymour was the grid theorem, a result describing that every graph of large *treewidth* contains a grid as minor.

In 2014 Wollan gave a definition for a tree-like decomposition and a width parameter *tree-cutwidth* with respect to immersions, a different graph containment relation. He provided results linking this parameter to immersions of large walls. This talk presents a version of this parameter for directed graphs, the *directed tree-cutwidth.* The main result is a grid theorem for directed tree-cutwidth establishing that it is linked to directed immersions of large cylindrical walls.

Webex link:

https://tugraz.webex.com/tugraz/j.php?MTID=maf534adc0b2d38dd1859e16cbc8d5f84

Mihyun Kang, Ronen Wdowinski