Graz University of Technology

Institut für Diskrete Mathematik

Seminar für Kombinatorik und Optimierung

Friday 15th January 14:15

Online meeting (Webex)

Divisible subdivisions

Michael Krivelevich

(Tel Aviv University)

We develop sufficient conditions for containment of graph subdivisions with sub-divided edges of prescribed divisibility in terms of containment of graph minors. Concretely, we prove that for every graph H of maximum degree at most 3 and for every positive integer q there is a finite $f = f(H, q)$ such that every minor of a complete graph K_f contains a subdivision of H in which every edge is replaced by a path whose length is divisible by q. Both the assumption of $\Delta(H) \leq 3$ and the requirement of zero residue modulo q for path length are essential.

For the case of cycles we can do much better - we show that for $f = O(q \log q)$ every K_f-minor contains a cycle of length divisible by q. This result settles a recent problem of Friedman and Krivelevich about cycles in (weakly) expanding graphs.

A joint work with Noga Alon.

Meeting link:

  https://tugraz.webex.com/tugraz/j.php?MTID=m1cd0904285a119237aa9a7ce985ad803

Meeting number: 137 149 1265

Password: JYc3B3dunG2

Joshua Erde, Mihyun Kang