

Institut für Diskrete Mathematik

Combinatorics Seminar

Friday 24th June 14:15

Online meeting (Webex)

Turán densities of tight cycles

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The *Turán density* of an r -graph H , denoted $\pi(H)$, is the limit of the maximum density of an n -vertex r -graph not containing a copy of H , as $n \rightarrow \infty$. Denote by C_ℓ the 3-uniform tight cycle on ℓ vertices. A conjecture due to Mubayi and Rödl (2002) asserts that $\pi(C_5) = 2\sqrt{3} - 3 \approx 0.464$, with the conjectured extremal example being an iterated construction which does not contain tight cycles whose length is not divisible by 3. We prove that any sufficiently long tight cycle whose length is not divisible by 3 has the above conjectured Turán density. Namely, if ℓ is sufficiently large and not divisible by 3 then $\pi(C_\ell) = 2\sqrt{3} - 3$. This is joint work with Nina Kamčev and Alexey Pokrovskiy.

Meeting link:

<https://tugraz.webex.com/tugraz/j.php?MTID=m40f85343e56ff5051d731ace1bea82e4>

Meeting number: 2731 089 0467

Password: btHRJxCa252

Joshua Erde, Mihyun Kang