Institut für Diskrete Mathematik

Combinatorics Seminar

Friday 17th November 12:30

Online meeting (Webex)

On induced C_4-free graphs with high average degree

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A long-standing conjecture of Thomassen from the 80's states that every graph with sufficiently high average degree contains a subgraph with high girth and still preserving large enough average degree. This conjecture has only been resolved in the early 2000's by Kühn and Osthus in the first non-trivial case i.e. they showed that for every k, there is $f(k)$ such the every graph with average degree at least $f(k)$ contains a subgraph which is C_4-free with average degree k.

We will talk about a recent result which strengthens this result of Kühn and Osthus in two ways. First, we prove an analogous induced version and secondly we give much better bounds for the function f allowing us obtain few non-trivial results as simple corollaries. Finally, we use these methods to confirm a conjecture Bonamy et al.

The talk is based on two joint works; One with Du, Scott, Hunter and McCarty and the other with Hunter.

Meeting link:

https://tugraz.webex.com/tugraz/j.php?MTID=mab523a645de428d5301998280dc510ed

Joshua Erde, Mihyun Kang