

1089-05-391

Florian Pfender* (florian.pfender@ucdenver.edu). *Complete subgraphs in multipartite graphs.*

Turán's Theorem states that every graph G of edge density $\|G\|/\binom{|G|}{2} > \frac{k-2}{k-1}$ contains a complete graph K^k and describes the unique extremal graphs. We give a similar Theorem for ℓ -partite graphs. For large ℓ , we find the minimal edge density d_ℓ^k , such that every ℓ -partite graph whose parts have pairwise edge density greater than d_ℓ^k contains a K^k . It turns out that $d_\ell^k = \frac{k-2}{k-1}$ for large enough ℓ , disproving a conjecture by Bondy, Chen, Thomassé and Thomassen. We also describe the structure of the extremal graphs. (Received February 19, 2013)