## Saturation in multipartite graphs

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**Resumo/Abstract:**
Given natural numbers $n, k, r$, let $sat(n, k, r)$ be the minimum number of edges in a $k$-partite graph with $k$ parts, each of size $n$, such that it is $K_r$-free but the addition of an edge joining any two non-adjacent vertices from different parts creates a $K_r$. Ferrara, Jacobson, Pfender and Wenger determined $sat(n, k, 3)$ for $n \geq 100$. Roberts showed that $sat(n, 4, 4) = 18n - 21$ for sufficiently large $n$. We prove that $sat(n, k, r)$ is linear in $n$ for fixed $k, r$ and we determine the constant in front of $n$ for some values of $k, r$.