Weak saturation numbers of complete bipartite graphs

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[1] IMPA

A graph G on n vertices is weakly F-saturated if the edges of $E(K_n)\setminus E(G)$ can be added to G, one edge at a time, in such a way that every added edge creates a new copy of F. The minimum size of a weakly F-saturated graph G of order n is denoted by $\mathrm{wsat}(n, F)$.

Lovász determined $\mathrm{wsat}(n, K_r)$ for $r \geq 3$, which was earlier conjectured by Bollobás and verified for $3 \leq r \leq 7$. Faudree, Gould and Jacobson determined the weak saturation number for different families of sparse graphs and, in particular, they have shown that $\mathrm{wsat}(n, K_{2,3}) = n + 1$.

In this talk, we discuss the weak saturation number of complete bipartite graphs and determine $\mathrm{wsat}(n, K_{t,t})$ whenever $n > 3t - 4$. This is a joint work with Gal Kronenberg and Natasha Morrison.