Complete bipartite Turán numbers

Simeon Ball (UPC, Barcelona)

Let H be a graph. The function $\mathrm{ex}(n,H)$ is the maximum number of edges that a graph with n vertices can have, which contains no subgraph isomorphic to H.

If H is not bipartite then the asymptotic behaviour of $\mathrm{ex}(n,H)$ is known, but if H is bipartite then in general this is not the case. This talk will focus on the case that H is a complete bipartite graph. I will review the previous constructions from a geometrical point of view and explain how this enables us to improve the lower bound of $\mathrm{ex}(n,K_{5,5})$.