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*Around extremal numbers*

The extremal number  $\text{ex}(n, H)$  is the maximum number of edges in an  $H$ -free graph with  $n$  vertices. When  $H$  has chromatic number at least three, the extremal number is well understood, but when  $H$  is bipartite, the function remains mysterious. Until very recently, the asymptotic behaviour of  $\text{ex}(n, H)$  was known for only a handful of bipartite graphs. However, the situation has changed dramatically in recent years. In this talk, we will discuss some of this progress.

If time permits, we will also touch upon the related question of counting the number of copies of a fixed bipartite graph in a graph of given density.

Partly based on joint work with Boris Bukh, Oliver Janzer and Joonkyung Lee.