

Rainbow Turán Numbers

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Given a specific number of vertices, how many edges can a graph have while still avoiding certain subgraphs? Defined in the 1940's, the Turán number of a graph H , $\text{ex}(n, H)$, is the largest number of edges among all n vertex graphs with no H subgraph. In 2007, Keevash, Mubayi, Sudakov and Verstraëte defined the rainbow Turán number of a graph H , $\text{ex}_R(n, H)$, as the largest number of edges for an n vertex graph, G , such that some proper coloring of G does not contain a rainbow H subgraph.

In this talk, I will give a brief introduction to extremal graph theory, Turán numbers and rainbow Turán numbers, before discussing results for the rainbow Turán numbers of double stars. I will also introduce generalizations of the rainbow Turán number as well as some related open problems.

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