

Tilings in graphs and directed graphs

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Given two graphs G and H , a perfect H -tiling in G is a collection of vertex-disjoint copies of H in G which together cover all the vertices in G . (Perfect H -tilings are also referred to as H -factors or perfect H -packings.) Over recent decades a wealth of research has been undertaken on the topic in the setting of graphs, directed graphs, hypergraphs and random graphs. For example, the celebrated Hajnal-Szemerédi theorem determines the minimum degree threshold that ensures a graph G contains a perfect K_r -tiling. In this talk I will survey some recent joint work including:

- a directed version of the Hajnal–Szemerédi theorem;
- a result on perfect H -tilings in randomly perturbed dense graphs;