Forbidden induced subgraphs

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Beineke in 1969 characterized the class of line graphs in terms of forbidden induced subgraphs. For given graphs G and H, G is said to be H-free if G does not contain an induced subgraph isomorphic to H. Analogously, for graphs $H_1, \ldots, H_k$, a graph G is $(H_1, \ldots, H_k)$-free if G contains none of $H_1, \ldots, H_k$ as an induced subgraph.

In the graph theory, various classes of graphs and several graph properties have been studied in terms of forbidden induced sugraphs. In this talk we focus on some of these classes and properties, which are characterized or at least have some connections to forbidden induced subgraphs, e.g. some hamiltonian properties and some graph colouring problems. Among others, we list some known results on forbidden pairs and triples implying hamiltonian properties, we discuss families of forbidden induced subgraphs for rainbow connection, and some forbidden pairs for perfect graphs and graphs which are ω-colourable.