

# The Maximum Independent Set Problem in subclasses of subcubic graphs

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(joint work with Ngoc Le and Ingo Schiermeyer)

The Maximum Independent Set problem is NP-hard and remains NP-hard for graphs with maximum degree three (also called *subcubic graphs*). In our talk we will study its complexity in hereditary subclasses of subcubic graphs.

Let  $A_q^r$  be the graph consisting of an induced cycle  $C_q$  and an induced path with  $r$  edges having an endvertex in common with the  $C_q$ , where  $A_4^1$  is known as the banner.

Our main result is that the Maximum Independent Set problem can be solved in polynomial time in several classes of  $(S_{i,j,k}, A_q^r)$ -free subcubic graphs, where  $S_{i,j,k}$  is the graph consisting of three induced paths of lengths  $i, j$  and  $k$ , with a common initial vertex.