

RIGIDITY MATROIDS OF GRAPHS

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Take a triangle and a square. The triangle is rigid: its angles are determined by the lengths of its edges. The square is flexible: you can deform it into a diamond-shape without changing the lengths of its edges. More generally, we can consider the rigidity or flexibility of a realisation of any graph: a placement of the vertices into Euclidean d -space which then fixes the lengths of the edges. The choice of realisation can affect the rigidity, but typically it does not and generic rigidity depends only on the graph. Determining which graphs are rigid in Euclidean d -space is a fundamental problem in discrete geometry. This talk will be an introduction to this topic. I will focus on the underlying rigidity matroids and give a survey of known results and open questions in this area.