

## **Homological methods in rigidity theory using graphs of groups**

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In joint work with Klara Stokes, we model rigidity-theoretic problems using group theory, leading to the notion of a graph-of-groups realisation. In recent work, I use cellular sheaves on graphs and their cohomology to study these structures. This results in a generalisation of the Geiringer-Laman theorem. More precisely, for graph-of-groups realisations which are defined using a Lie group  $G$  and conjugates of a 1-dimensional closed subgroup  $H$  with  $N_G(H)/H$  is finite, rigidity is generically characterised by a sparsity condition. In this talk, I will explain the graph-of-groups model and some of the main ideas behind the proof of the result.