Random graphs and its applications for networks

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Rigidity percolation and random graphs

Consider structures made with balls related by fixed lengths bars; the balls act as joints: the bars can freely rotate around the balls. We are interested in the question: is the structure rigid or floppy? I will first introduce rigidity theory, and how it relates with graph theory. For large structures with a probabilistic definition, a natural question is « rigidity percolation ». I will present some old conjectures on the subject, and some recent results for random graphs.

Joint work with Marc Lelarge and Dieter Mitsche.