

Nikolaos Fountoulakis (Max-Planck-Institut für Informatik)

3-connected cores in random 2-connected graphs

(joint work with Konstantinos Panagiotou)

We investigate random 2-connected graphs whose 3-connected building blocks (which are called the "cores") are sampled from a given family of 3-connected graphs. We provide a critical condition which determines the (with high probability) existence of a "giant" 3-connected core in a random 2-connected graph. Furthermore, we provide a complete description of the typical structure of such a random 2-connected graph, giving sharp concentration results about the numbers and the sizes of smaller 3-connected cores. In particular, our results apply to random 2-connected planar graphs, where we give such a detailed description.