

# **PHASE TRANSITION PHENOMENA IN RANDOM DISCRETE STRUCTURES**

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A random discrete structure is a combinatorial object, which emerges as a result of a series of random experiments; equivalently, it can be viewed as a probability space whose elements are combinatorial structures as graphs, hypergraphs, permutations etc. In many of random discrete structures a small change of parameters of the model can greatly affect its (typical) behaviour. One of the seminal examples of such a phenomenon is an abrupt emergence of the giant component in a random graph, when the probability of the existence of a single edge is close to a certain "critical" value. In the talk we describe the critical behaviour of several models of random graphs, and comment on the tools and techniques used to study the phase transition in finite random structures.