DOCTORAL PROGRAM
DISCRETE MATHEMATICS
TU & KFU GRAZ · MU LEOBEN
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Institut für Optimierung und Diskrete Mathematik

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Random hyperbolic graphs: degree distribution, clustering and component structure

Nikolaos Fountoulakis

(University of Birmingham)

Random geometric graphs have been studied over the last 50 years in great detail. These are graphs that are formed between points randomly allocated on a Euclidean space and any two of them are joined if they are close enough. However, all this theory has been developed when the underlying space is equipped with the Euclidean metric. But, what if the underlying space is curved? Our focus will be on the case where the underlying space is a hyperbolic space. We will discuss the typical degree distribution of these random graphs as well as triangle counts and global clustering. Furthermore, we will give a critical condition on the parameters of the model that determines the existence of a giant component.

This is joint work with E. Candellero, M. Bode and T. Mueller.

Mihyun Kang