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

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Law of large numbers for the largest component of random graphs on the hyperbolic plane

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In this talk, we consider a recent model which was developed by Krioukov et al. of random geometric graphs on the hyperbolic plane. This may be also viewed as the geometrisation of the well-known Chung-Lu model of inhomogeneous random graphs. We show that the size of the largest connected component undergoes a phase transition and a giant component emerges as soon as the curvature of the underlying hyperbolic plane crosses a certain value. We also show that the fraction of vertices that are contained there converges in probability to a certain constant, which is related to a continuum percolation model on the upper-half plane.

This is joint work with Tobias Müller (Utrecht University).

Mihyun Kang