DOCTORAL PROGRAM
DISCRETE MATHEMATICS

TU & KFU GRAZ·MU LEOBEN
AUSTRIA

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Graz University of Technology

Institut für Optimierung und Diskrete Mathematik

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Symmetries of triangulations

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Random planar graphs have attained considerable attention in the recent years. Amongst well studied properties of random planar graphs are connectedness, degree distribution and maximum degree, and the containment of subgraphs.

However, like for the Erdős-Rényi random graph all the results are for *labelled* planar graphs. For unlabelled planar graphs, not even their asymptotic number on a given number of vertices is known. While this number is known for labelled planar graphs, it is not possible to derive the number of unlabelled planar graphs since an unlabelled planar graph can correspond to different numbers of labelled planar graphs due to symmetries of the graph.

Triangulations are the most basic class of planar graphs—by describing their symmetries and the number of triangulations having these kinds of symmetries, we can derive all the information needed to describe symmetries of unlabelled planar graphs and eventually determine their asymptotic number.

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