

SALZBURG MATHEMATICS COLLOQUIUM

Winter 2019/2020

Stephan Wagner (Stellenbosch)

„Loop models on a fractal“

December 12, 2019

Abstract:

We consider two types of loop models on self-similar, fractal-like graphs, the Sierpiński gasket and its finite approximations being a classical example. In one model, a 2-factor (spanning subgraph whose components are cycles) is chosen uniformly at random. In the other, the edge set is partitioned into cycles, again uniformly at random. The presence of "holes" in the graph turns out to have interesting consequences. While the latter model mostly yields rather short cycles, long cycles surrounding the holes appear with high probability in random 2-factors, and those long loops feature interesting geometric properties reminiscent of random walks and their loop-erased variant. Moreover, an interesting phase transition can be observed.

Thursday, **15:00-15:45**

Hörsaal 414, 1. Stock