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From fractals in external DLA to internal DLA on fractals. (English) Zbl 1470.60206

Freiberg, Uta (ed.) et al., Fractal geometry and stochastics VI. Selected papers of the 6th conference, Bad Herrenalb, Germany, September 30 – October 6, 2018. Cham: Birkhäuser. Prog. Probab. 76, 273-298 (2021).

Summary: We present an unified approach on the behavior of two random growth models (external DLA and internal DLA) on infinite graphs, the second one being an internal counterpart of the first one. Even though the two models look pretty similar, their behavior is completely different: while external DLA tends to build irregularities and fractal-like structures, internal DLA tends to fill up gaps and to produce regular clusters. We will also consider the aforementioned models on fractal graphs like Sierpinski gasket and carpet, and present some recent results and possible questions to investigate.

For the entire collection see Zbl 1458.28001.

MSC:

60J10 Markov chains (discrete-time Markov processes on discrete state spaces)
28A80 Fractals
31A15 Potentials and capacity, harmonic measure, extremal length and related notions in two dimensions
05C81 Random walks on graphs

Keywords:
random walks; harmonic measure; cluster models; Sierpinski gasket; integer lattices; trees; hyperbolic plane; fractal graphs

Full Text: DOI arXiv

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