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题目: An equality in law of loop-erased random walks with applications on some fractal spaces

摘要: We introduce the partial loop erasure (PLE) procedure, under which loops are erased only when the Markov chain enters a subset of the state space. We will prove an equality in law of the usual loop-erased random walk (LERW) and the simple path obtained through an iterated PLE procedure. The equality has applications on some fractal spaces, including the existence of the scaling limits of LERW on the Sierpinski gasket and on (planar) Sierpinski carpets. For simplicity, I will use the Sierpinski gasket as a concrete example, and I will review the construction of the Brownian motion on the Sierpinski gasket for necessary backgrounds at the beginning of the talk.