



复旦大学数学科学学院 数学综合报告会

报告题目: The distance between two extremal points on a slightly supercritical random series-parallel graph

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地点: 光华楼东主楼 1513

报告摘要:

We consider the random series-parallel graph introduced by Hambly and Jordan (2004). The graph is built recursively: at each step, every edge in the graph is independently either replaced with probability p by a series of two edges, or with probability $1-p$ by two parallel edges. At the n -th step of the recursive procedure, the distance between the extremal points on the graph is denoted by $D_n(p)$. It is known that $D_n(p)$ possesses a phase transition at $p=p_c := \frac{1}{2}$ and we will study its behavior in the slightly supercritical regime $p=p_c+\varepsilon$. Our main result says that as $\varepsilon \rightarrow 0^+$, the exponent $\alpha(p) := \lim_{n \rightarrow \infty} \frac{\log E[D_n(p)]}{n}$ behaves like $\sqrt{\zeta(2) \varepsilon}$, where $\zeta(2) := \frac{\pi^2}{6}$.

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