

Scaling limits in random structures

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Abstract: A powerful idea in many areas of mathematics and physics is the notion of a "scaling limit", i.e., looking at a complicated problem with an appropriate "level of zoom" can simplify the analysis. We will explore this idea as it relates to various problems involving randomness/stochasticity in a series of 4 lectures. 1. What is a scaling limit? 2. Random graphs and scaling limits 3. Stochastic PDE and scaling limits 4. Diffusion limited aggregation models.