Mathematics Colloquium

Thursday, October 24, 2024
3:30–4:30 p.m.
Phillips Hall 332

Growth Models in the Plane

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Abstract. We'll study the growth of (two-dimensional) things. Think about lichen growing on a tree (tends to be sort of round). Another fun example is electricity propagating through wood (tends to be sort of fractal). A famous and still very mysterious model coming from probability theory is called DLA: it forms the most beautiful fractal patterns. Despite this, DLA is actually fairly poorly understood and we will quickly survey the existing ideas, mostly due to Harry Kesten. We will then discuss a new type of growth model that behaves similarly, many more pictures will be shown, and which can be precisely analyzed. No prior knowledge is necessary and there will be lots of pictures and open problems!