The Abelian Sandpile and Circle Packings

THURSDAY, March 1, 2018, at 5:00 PM
Jones 226, 5747 South Ellis Avenue

ABSTRACT

The Abelian sandpile is a simple and deterministic diffusion process on graphs, devised as a model of self-organized criticality by Bak, Tang, and Weisenfeld. The scaling limit of the sandpile on a periodic graph is a nonlinear elliptic partial differential equation with complicated algebraic structure. I will discuss the sandpile, the algebraic structure of its scaling limit, and the fractal pictures it produces.