Abstract:

I will present a game played on finite graphs with intricate combinatorial properties. It goes by many names, including chip-firing, abelian sandpiles, critical groups, graph jacobians, and component groups of Neron models, and appears in a variety of contexts all over mathematics. After exploring its basic structure, I will highlight analogies and direct relations to divisor class groups of curves and number fields, with particular attention to jacobians of random graphs.