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A variation of chip firing

A chip-firing game on a graph $G = (V, E)$ begins by placing a configuration $C \colon V \to \mathbb{N}$ of chips on its vertices. Then single chips are added sequentially to vertices selected uniformly at random. If, after any step, a vertex v contains more chips than its threshold, *i.e.*, if $C(v) > \deg(v)$, then v *fires*, sending one chip to each neighbor and losing one chip to the 'ether'. A firing event may trigger subsequent firings; these play out as long as possible—until the chip configuration is 'relaxed'—at which point a new vertex is seeded, and the process repeats. This talk surveys some results on this version of chip firing, a variant on one studied by Bjorner, Lovász, Shor and others in the early 1990s. A sample (perhaps surprising) result: if the relaxed configurations are viewed as states in a Markov chain, then its stationary distribution is uniform over all 'legal' configurations. This joint work with David Perkins (Houghton College, NY) forms the basis for his recent PhD thesis.