

1123-05-144

**Sam Hopkins\*** ([shopkins@mit.edu](mailto:shopkins@mit.edu)) and **James Propp**. *Sorting via chip-firing.*

Taking chip-firing back to its roots, we investigate the chip-firing process on a one-dimensional infinite path. However, rather than treating the chips as indistinguishable, we label them. To fire an unstable vertex, we choose any two chips at that vertex and move the lesser labeled chip to the left and the greater labeled chip to the right. Under certain conditions, this labeled version of the chip-firing process still exhibits remarkable (and much subtler) confluence properties: when the number of chips is even, the chip always end up in sorted order. (Received August 23, 2016)