1117-11-276 **Jennifer Park** (`jmypark@umich.edu`), **Bjorn Poonen** (`poonen@mit.edu`), **John Voight*** (`jvoight@gmail.com`) and **Melanie Matchett Wood** (`mmwood@math.wisc.edu`). *A heuristic for boundedness of ranks of elliptic curves.*

We present a heuristic that suggests that ranks of elliptic curves E over the rational numbers are bounded. In fact, it suggests that there are only finitely many E of rank greater than 21. Our heuristic is based on modeling the ranks and Shafarevich–Tate groups of elliptic curves simultaneously, and relies on a theorem counting alternating integer matrices of specified rank. We also discuss analogues for elliptic curves over other global fields. (Received January 16, 2016)