

1152-11-488

Edgar Costa, Ravi Donepudi* (donepud2@illinois.edu), **Ravi Fernando, McKenzie West, Caleb Springer** and **Valentijn Karemaker**. *Combinatorial approaches to geometry over finite fields*.

Algebraic curves and abelian varieties are commonly studied geometric objects over finite fields. They are linked by the Torelli map which attaches to an algebraic curve its Jacobian, an abelian variety. A guiding problem in this area is to characterize which abelian varieties arise as jacobians of smooth algebraic curves. As the size of the finite field grows, we show that asymptotically at least a quarter of all isogeny classes of abelian varieties of dimension four do not contain Jacobians of hyperelliptic curves. Our work is inspired by the extensive experimental data gathered at the LMFDB. (Received September 10, 2019)