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Reductions of points on elliptic curves

Let E be an elliptic curve defined over \mathbb{Q} . Let Γ be a subgroup of rank r of the group of rational points $E(\mathbb{Q})$ of E . For any prime p of good reduction, let $\bar{\Gamma}$ be the reduction of Γ modulo p . Under certain standard assumptions, we prove that for almost all primes p (i.e. for a set of primes of density one), we have $|\bar{\Gamma}| \geq p/f(p)$, where $f(x)$ is any function such that $f(x) \rightarrow \infty$, at an arbitrary slow speed, as $x \rightarrow \infty$. This provides additional evidence in support of a conjecture of Lang and Trotter from 1977. This is a joint work with Dragos Ghioca (UBC) and Kumar Murty (Toronto).