1078-11-340   **K James*** (`kevja@clemson.edu`), Department of Mathematical Sciences, Clemson University, BOX 340975, Clemson, SC 29634-0975. *The distribution of the traces of Frobenius for elliptic curves.*

Let $E : y^2 = x^3 + Ax + B$ be an elliptic curve over $\mathbb{Q}$ and consider its reduction modulo p. Hasse's theorem says that the number of points on this curve over $\mathbb{F}_p$ is within $2\sqrt{p}$ of $p + 1$. We define $a_E(p) = p + 1 - \#E(\mathbb{F}_p)$. In this talk we will consider questions related to the distribution of $a_E(p)$ as p varies over the set of rational primes. (Received December 13, 2011)