Yasanthi Kottegoda* (yasanthi_k@yahoo.com). The number of zeros of linear recurring sequences over finite fields. Preliminary report.

I discuss the possible number of zeros of a linear recurring sequence over a finite field $\mathbb{F}_q$, based on an irreducible polynomial of degree $d$ and order $m$ as the characteristic polynomial. I give upper and lower bounds on the cardinality of the set of number of zeros. The set is determined when $t = (q^d - 1)/m$ has the form $q^a + 1$ or $q^{2a} - q^a + 1$. The connection with coding theory is a key ingredient. (Received September 16, 2013)