

1084-11-167

**Enrique Treviño\*** ([etrevin1@swarthmore.edu](mailto:etrevin1@swarthmore.edu)), 500 College Avenue, Swarthmore, PA 19081. *A numerically explicit Burgess inequality and an application to quadratic non-residues.*

Let  $\chi$  be a Dirichlet character mod  $p$  for  $p$  a prime number. Let  $S_\chi(M, N) = \sum_{M < n \leq M+N} \chi(n)$ . The celebrated Burgess inequality states that for  $M, N$  integers and  $r$  a natural number,  $S_\chi(M, N) \ll_\varepsilon N^{1-1/r} p^{\frac{r+1}{4r^2} + \varepsilon}$ . In this talk we give an explicit version of this inequality and we apply it to answer some questions regarding the least quadratic nonresidue mod  $p$ . (Received August 31, 2012)