

1086-11-2641

Michael Filaseta* (filaseta@math.sc.edu), Mathematics Department, University of South Carolina, Columbia, SC 29208. *A polynomial problem of Turán modulo primes.*

Turán asked whether there is an absolute constant C such that every polynomial $f(x) \in \mathbb{Z}[x]$ is within C of being an irreducible polynomial (meaning that there is a $w(x) \in \mathbb{Z}[x]$ with $\deg w \leq \deg f$ and with the sum of the absolute values of the coefficients of $w(x)$ at most C satisfying $f(x) + w(x)$ is irreducible over the rationals). As an application of covering systems, we will look at this problem modulo primes and give lower bounds on what such a C might be. In addition, we will survey computations that have been done that suggest these lower bounds are sharp. The original problem of Turán will be discussed in the context of these results modulo primes. (Received September 25, 2012)