

1014-11-1007

Carl Pomerance and **Nathan C Ryan***, Department of Mathematics, Box 951555, Los Angeles, CA 90095-1555. *Maximal Height of Divisors of $x^n - 1$* . Preliminary report.

The size of the coefficients of cyclotomic polynomials is a problem that has been well-studied. This paper investigates the following generalization: suppose $f(x) \in \mathbb{Z}[x]$ is a divisor of $x^n - 1$, so that $f(x)$ is the product of the cyclotomic polynomials corresponding to some of the divisors of n . We ask about the largest coefficient in absolute value over all such divisors of $x^n - 1$, obtaining a fairly tight estimate for the maximal order of this function. (Received September 26, 2005)