

A Test for the Irreducibility of Lacunary 0-1 Polynomials

The computational complexities of traditional algorithms for the irreducibility of a polynomial depend at best polynomially on the degree of the polynomial. The authors have used ideas of Ljunggren (1960) and Schinzel (1969) to develop a significantly improved algorithm in the case of 0-1 polynomials, an algorithm with a computational complexity that depends logarithmically on the degree of the polynomial (but somewhat poorly on the number of non-zero terms). This talk will provide an overview of the algorithm, including its implementation (in Maple), and a discussion of its performance. A WWW-based interface to this algorithm can be found at the URL:

<http://www.math.sc.edu/~filaseta/irreduc.html>

Michael Filaseta
Department of Mathematics
University of South Carolina
Columbia, SC 29208
filaseta@math.sc.edu

Douglas B. Meade
Department of Mathematics
University of South Carolina
Columbia, SC 29208
meade@math.sc.edu