Penganggaran saiz p-adic pensifar sepunya terbitan separa polinomial berdarjah enam

ABSTRACT

It is known that the value of the exponential sum S(f;p) depends on the estimate of the cardinality [V], the number of elements contained in the set V = {x mod p /fx   0 mod p } where fx is the partial derivatives of f with respect to x. The cardinality of V in turn depends on the p-adic sizes of common zeros of the partial derivatives fx. This paper presents a methods of determining the p-adic of the components of (   ) a common root of partial derivative polynomials of f(x,y) in Zp[x,y] of degree six based on the p-adic Newton polyhedron technique associated with the polynomial. The degree six polynomial is of the form f(x,y) = ax6 + bx5y + cx4y2 + dx3y3 + ex2y4 + mxy5 + ny6 + sx + ty + k. The estimate obtained is in terms of the p-adic sizes of the coefficients of the dominant terms in f.

Keyword: Cardinality; Common zero; p-adic sizes; Newton polyhedron; Indicator diagram