

Estimation of p-adic sizes of common zeros of partial derivatives associated with a cubic form.

Abstract

In this paper we determined the estimate of p-adic sizes of common zeros of partial derivative polynomials associated with a cubic form whose indicator diagrams have one overlapping segment by using Newton polyhedron technique. We showed that the p-adic sizes of such common zeros can be found explicitly on the overlapping segment of the indicator diagrams associated with the polynomials.

Keyword: Indicator diagram; Newton polyhedron; Overlapping segment; P-adic sizes.