

Berenstein, Carlos A.; Yger, Alain

Residue calculus and effective Nullstellensatz. (English) Zbl 0944.14002
Am. J. Math. 121, No. 4, 723-796 (1999).

Let A be an integral factorial regular ring with infinite quotient field K and equipped with a size (the typical examples are \mathbb{Z} and $\mathbb{F}_p[y_1, \dots, y_q]$). Using multivariate residue calculus, the authors are studying the Bézout identity and consequently the effective Nullstellensatz in $K[X_1, \dots, X_n]$. This provides sharp size estimates for the denominator and the “divisors” in the Bézout identity. The results obtained here improve the estimates obtained in the case $A = \mathbb{Z}$ by the same authors in a previous work [*C. A. Berenstein and A. Yger, Acta Math.* 166, No. 1/2, 69-120 (1991; [Zbl 0724.32002](#))].

Reviewer: [Christodor-Paul Ionescu \(București\)](#)

MSC:

[14A05](#) Relevant commutative algebra
[13F20](#) Polynomial rings and ideals; rings of integer-valued polynomials

Cited in **3** Reviews
Cited in **11** Documents

Keywords:

effective Nullstellensatz; Bézout identity

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