

Bounds for the degrees of the kernels for some bivariate polynomial vectors

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Abstract

Let \mathbb{F} be a field and $P(s, t) = (p_1(s, t), \dots, p_r(s, t)) \in \mathbb{F}[s, t]^{1 \times r}$ a polynomial vector. If the columns of $N(s, t) \in \mathbb{F}[s, t]^{r \times (r-1)}$ are a minimal basis of the kernel of $P(s, t)$, we find a bound of the degree of $N(s, t)$ under certain conditions of $P(s, t)$. To do this, we adapt the effective version of Quillen-Suslin Theorem given in [FG90]. We improve the previous results in [Cid19].

References

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