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Irreducibility criteria for compositions of multivariate polynomials over arbitrary fields

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Abstract. We provide irreducibility criteria for compositions of multivariate polynomials over a field K, of the form $f(X_1, \dots, X_{r-1}, g(X_1, \dots, X_r))$, with both f and g in $K[X_1, \dots, X_r]$, for the case that f, viewed as a polynomial in X_r, has leading coefficient divisible by the k^{th} power of an irreducible polynomial $p(X_1, \dots, X_{r-1})$ of sufficiently large degree with respect to X_{r-1}, with k coprime to $\deg_r f$ and $\deg_r g$.

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