

Galois theory in several variables: a number theory perspective

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A fundamental result in Galois theory is that a generic degree n polynomial has Galois group S_n . Esterov generalized this result to several variables, giving conditions for the Galois group of a polynomial system to be the full symmetric group. When the conditions fail, it is an imprimitive subgroup, which is not in general known.

In Esterov's work, the Galois group is defined by monodromy action. To a number theorist, Galois groups are defined by field automorphisms, and are deeply intertwined with the splitting and ramification of primes. I show how this perspective can be used in some settings to determine the Galois group in the imprimitive case.

This is joint work with Frank Sottile.