A century ago, Camille Jordan proved that the complex general linear group GL_n(C), has the Jordan property: there is a constant C_n such that every finite subgroup of GL_n(C) has an abelian subgroup of index at most C_n.

In [1], Popov asks whether the full automorphism group Aut(X) of a projective variety has the Jordan property. When X is 2-dimensional, it is true; see [1] and [2].

In [4] Prof. Zhang and his PhD student Meng first show that all algebraic groups have the Jordan property. They then answer Popov’s question in the affirmative in the full generality.

The proof uses Minkowski’s bound for finite linear groups over a field finitely generated over the rationals, and the classical decomposition of Rosenlicht of an algebraic group into the product of its linear or anti-linear part.

See also [3] for the case of birational automorphisms, extending Serre’s result in dimension two.

References


