



Contribution ID: 16

Type: **not specified**

David Szabo: Finite subgroups of transformation groups

Tuesday 6 September 2022 18:45 (15 minutes)

C. Jordan proved in 1877 that every finite subgroup of $GL_n(\mathbb{C})$ has a normal abelian subgroup of index bounded by a function of n – in short, these finite subgroups are almost' abelian.

It is natural to investigate whether an analogous statement holds for the finite subgroups of natural transformation groups like

the birational automorphism group of an algebraic variety, or

the diffeomorphism group of a compact manifold.

Recent developments on the topic by A. Guld (2020) and Pyber–Csikós–E. Szabó (2022) gave a positive answer when 'abelian' is replaced by 'nilpotent of class at most 2', and 'by nilpotent' in the respective cases.

We will briefly discuss why the nilpotency class has to be at least 2 in both cases focusing on the common purely group theoretic ideas.