Universidad de los Andes
Facultad de Ciencias

Departamento de Matemáticas

mini-course

Groups of Small Morley Rank

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October:
16, 18, 22, 23, 25.
4:00pm - 6:00pm
2018

Groups of finite Morley rank are the model-theorist's approach to algebraic groups over algebraically closed fields: one has a notion of dimension (the Morley rank) which behaves like the Zariski dimension, but there is no given topological/functorial structure. This allows only basic arguments. It was conjectured by Cherlin and Zilber that all infinite simple groups of finite Morley rank ought to be algebraic groups over algebraically closed fields. And despite nearly 40 years of efforts, the Cherlin-Zilber conjecture is still open.

As a matter of fact, the solution in rank 3 was given only two years ago by Frécon. It is completely independent from the bulk of earlier work (mostly cfsg-oriented), and it is unclear whether it will open new paths. But Wagner's rewriting of Frécon's theorem is a beautiful and significant piece of mathematics, which can be taught in a self-contained class.

This mini-course will thus explain the full solution of the conjecture in rank 3. It is of interest to at least four (non-disjoint) kinds of mathematicians:

- **Model-theorists**: who will understand what is going on since no big group-theoretic guns are required in small rank.
- **Group-theorists**: who will enjoy seeing how important involutions are even in mathematical logic.
- **Geometers**: who will be puzzled by what happens when one looks at algebraic groups from the model-theoretic perspective.
- **Aesthetes**: since, needless to say, the methods are beautiful.

Entrada libre - Requiere inscripción en:

matematicas.uniandes.edu.co/eventos/2018/morley