▶ ELÍAS BARO, *From commutators to Cartan subgroups in the o-minimal setting.*
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E-mail: `eliasbaro@pdi.ucm.es`. Groups definable in o-minimal structures and groups of Finite Morley Rank sometimes have an orthogonal behaviour. For example, while the commutator subgroup of a group of FMR is definable, a counterexample of this fact in the o-minimal case has been recently found by A. Conversano. In groups of FMR it has been conjectured the conjugacy of Carter subgroups, i.e., nilpotent definable and definably connected subgroups of finite index in its normalizer. Again, the o-minimal analogue of this conjecture is false in general. However, groups of FMR and o-minimal groups share a lot of properties: for example, they both have a descending chain condition for definable subgroups and a definable and additive dimension. From this starting point, and following arguments with a FMR flavour, in [1] we study in the o-minimal setting in which situations is the commutator subgroup of a group definable. For example, we show that this is the case for solvable groups. In [2] the study of Carter subgroups in the o-minimal context lead us to the concept of Cartan subgroups. In this talk I will try to survey the results of this two papers.

[1] ELIAS BARO, ERIC JALIGOT, MARGARITA OTERO, *Commutators in groups definable in o-minimal structures*, to appear in ***Proceedings of the American Mathematical Society***, http://dx.doi.org/10.1090/S0002-9939-2012-11209-2,(2011).

[2] ———, *Cartan subgroups of groups definable in o-minimal structures*, ***e-print***, http://arxiv.org/abs/1109.4349, (2011).