

- ▶ JAKUB GISMATULLIN, *Model theoretic connected components of groups*.
Instytut Matematyczny Uniwersytetu Wrocławskiego, pl. Grunwaldzki 2/4, 50-384
Wrocław, Poland.
E-mail: gismat@math.uni.wroc.pl.
URL Address: www.math.uni.wroc.pl/~gismat.

We give an exposition of recent results concerning model theoretic connected components of groups from authors Ph.D. thesis [1] (e.g. existence under the NIP assumption of the smallest invariant over some small set of parameters subgroup with bounded index, arithmetic relations between model theoretic connected components of an additive and multiplicative groups of a field).

Our motivation for considering model theoretic connected components is the dependence (discovered in [2]) between them and various strong types.

In the second part of the talk we introduce the class of absolutely connected groups, i.e groups without proper subgroups (in a saturated extension) of bounded index and invariant under automorphisms. We characterize this class using purely algebraic conditions in terms of thick sets and generating properties. Examples of such groups are quasi-simple algebraic groups ($SL_n(K)$, $Sp_n(K)$, $SL_\infty(K)$), symmetric groups $Alt(\Omega)$, $Sym^\kappa(\Omega)$, infinite dimensional general linear groups $GL(V)$ ($\dim(V) = \infty$).

[1] Jakub Gismatullin *G-compactness and groups*, Ph.D. thesis, Instytut Matematyczny Uniwersytetu Wrocławskiego, Wrocław 2009.

[2] JAKUB GISMATULLIN, LUDOMIR NEWELSKI, *G-compactness and groups*, *Archive for Mathematical Logic*, vol. 47 (2008), no. 5, pp. 479–501.