Program for the seminar

Model theory of groups

K. Tent and A. Fornasiero

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A background in logic and basic model theory is required: see for instance the first 2 chapters of [2]. Some knowledge of algebraic groups furnishes some motivations, but it is not necessary.

All the references for the seminar will be to [1].

1. Introduction to model theory (Morley Rank, stability, NIP) + §1.1 (examples of stable groups); by the organizers.
2. §§1.2–4: The order property; Chain conditions on subgroups; Connected components.
3. §§2.1–2: Generics; Indecomposable sets and Zil'bers theorem.

More model theory (imaginaries, finite dimension, internal types); by the organizers (short: about 1/2 hour).

4. §2.3: Lascar analyis.
5. §2.5: Binding groups.
6. §2.6: Hrushovski analysis.
7. §§3.1–2: Macintyre's Theorem and action of an Abelian group on an Abelian group.
8. §3.3 and §3.4 up to Corollary 3.15: Reineke's Theoren; Commutators.
9. Remainder of §3.4 and §3.5: Commutators; Solvable groups.
10. §§3.6–7: Semisimple groups; Action of a groups on a strongly minimal set.

References

[1] Bruno Poizat, Stable groups. Mathematical Surveys and Monographs, **87**. AMS, Providence, RI, 2001.
Also avaiable in French: Bruno Poizat, Groupes stables. Nur al-Mantiq wal-Ma'rifah, **2**. Bruno Poizat, Lyon, 1987.

[2] Katrin Tent and Martin Ziegler, A course in Model Theory. Book in preparation, available at:
`http://home.mathematik.uni-freiburg.de/ziegler/buch.pdf`.