The elementary theory of proabelian groups

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To a profinite group G one assigns the inverse system $S(G)$ of (continuous) finite quotients of G. In an appropriate ω-sorted language $\mathrm{L_{IS}}$ (introduced in [CDM] by Cherlin, van den Dries and Macintyre, see also Chatzidakis in [C]), the systems $S(G)$ form an elementary class.

We only consider theories of proabelian groups: We give elementary invariants for every complete $\mathrm{L_{IS}}$-theory of proabelian groups, and relate elementary equivalence of proabelian groups in $\mathrm{L_{IS}}$ to equivalence in the usual group language $\mathrm{L_{Gr}}$, using results from Szmielew [Sz] and Eklof/Fisher [Ek/Fi] on (discrete) abelian groups. Further we develop basic model theoretic results on saturated models and categoricity.

References

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