# On the construction of CF pro-$p$-groups by coclass

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The classification of finite $p$-groups is an often examined area of group theory. In this talk the classification by coclass is investigated for the special class of CF groups. These groups were introduced by Norman Blackburn as a generalisation of groups of maximal class.
The Coclass-Project will be established for background knowledge. It was initialised by Charles Leedham-Green and Mike Newman. Most important for this theory is the definition of coclass and the coclass-graph. Guided by this, CF pro-$p$-groups will be investigated as these arise from the inverse limit of the infinite branches of this coclass-graph.
The main result is the construction of a special class of CF pro-$p$-groups. This construction yields at least $p^{p^{s-1}-(s+2)}$ different CF pro-$p$-groups of coclass $s$. It is known that there exists up to isomorphism only one pro-$p$-group of maximal class for each prime $p$.