Two classes of finite p-groups

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Abstract. Assume G is a finite p-group. G is called an $\mathcal{A}_t$-*group* if every subgroup of index p^t of G is abelian, but there is at least one non-abelian subgroup of index p^{t-1}. G is is called a $\mathcal{C}_t$-*group* if G has at least a cyclic subgroup of index p^t and all subgroups of index p^{t-1} of G are not cyclic. For $t \leq 3$, $\mathcal{A}_t$-groups and $\mathcal{C}_t$-group are classified. In this talk, we will introduce some application of the classification of $\mathcal{A}_3$-groups and some characterizations of $\mathcal{C}_t$-groups.