EXTENSIONS IN VARIETIES OF GROUPS AND ALGEBRAS

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The principal object of the following investigation is to study the *Schreier theory of extensions* and its analogue for any variety V_S of groups or (not necessarily associative) linear algebras defined by a fixed (but arbitrary) set S of identical relations, and then to show how the *Schreier theory* can be applied to give various qualitative results on extensions within such a variety.

Apart from dealing with groups and algebras separately, the discussion treats in a unified way extensions within such varieties as the varieties of (i) all groups, (ii) abelian groups, (iii) groups of fixed exponent k, (iv) groups of fixed nilpotency class k, (v) associative algebras, (vi) commutative and associative algebras, (vii) Lie algebras, and (viii) Jordan algebras, etc; although groups and algebras are treated separately, there are strong analogies between the results obtained for the two cases.