

On extensions of some classes of algebras

ABSTRACT

The paper consists of three parts. In the first part we discuss on extensions of Lie algebras and their importance in Physics. Then we deal with the extensions of some classes of algebras with one binary operation. The third part is devoted to the study of extensions of two classes of algebras, possessing two algebraic operations, called dialgebras. In all the cases we propose 2-cocycles and respective extensions. The motivation to study the extensions is to use them further for the classification problem of the classes algebras considered in low dimensional cases.

Keyword : Lie algebra; Associative algebra; Pre-Lie algebra; Leibniz algebra; Zinbiel algebra; Dialgebra