

On isomorphism classes and invariants of a subclass of low-dimensional complex filiform Leibniz algebras

ABSTRACT

The article aims to study the classification problem of low-dimensional complex filiform Leibniz algebras. It is known that filiform Leibniz algebras come out from two sources. The first source is a naturally graded non-Lie filiform Leibniz algebra, and another one is a naturally graded filiform Lie algebra. In this article, we classify a subclass of the class of filiform Leibniz algebras appearing from the naturally graded non-Lie filiform Leibniz algebra. We give complete classification and isomorphism criteria in dimensions 5–7. The method of classification is purely algorithmic. The isomorphism criteria are given in terms of invariant functions.

Keyword: Filiform Leibniz algebra; Invariant function; Isomorphism