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On isomorphisms and invariants of finite dimensional complex filiform Leibniz algebras. (English summary)

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Leibniz algebras, a generalization of Lie algebras, were introduced by J.-L. Loday [Enseign. Math. (2) **39** (1993), no. 3-4, 269–293; MR1252069] and C. Cuvier [Ann. Sci. École Norm. Sup. (4) **27** (1994), no. 1, 1–45; MR1258404]. A motivation to study this class of non-associative algebras can be found in the definition of the n-cochains when the tensor product is replaced by the exterior product. In such a case, the differential property is obtained by considering the Leibniz identity instead of the anticommutativity and the Jacobi identity. It turns out that Leibniz algebras generalize the role played by Lie algebras in several areas: differential geometry, homological algebra, classical algebraic topology, algebraic K-theory, loop spaces, noncommutative geometry, quantum physics, etc.

Recently, S. A. Ayupov and B. A. Omirov [Sibirsk. Mat. Zh. **42** (2001), no. 1, 18–29, i; MR1830788] established the notion of filiform Leibniz algebras, which includes as a subclass the class of filiform Lie algebras.

In this paper, the authors introduce a method, based on algebraic invariants, to classify a class of filiform Leibniz algebras. An application of the developed method to some low-dimensional complex filiform Leibniz algebras is provided. The resulting classification in 5 and 6 dimensions coincides with the classification given by J. R. Gómez Martin, A. Jiménez-Merchán and Yu. B. Khakimdzhanov [J. Pure Appl. Algebra **130** (1998), no. 2, 133–158; MR1635083]. *Juana Sánchez Ortega*

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Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.