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# Classification of 4-Dimensional Nilpotent Complex Leibniz Algebras

mahmood gol sabahi\*,

**Abstract** Leibniz algebras that are noncommutative generalizations of Lie algebras are considered. Nilpotent and simple Leibniz algebras are investigated. The structure theory of finit-dimensional Leibniz algebras with additional properties is studied. Furthermore, the second purpose section is to provide the classification of four dimensional complex nilpotent Leibniz algebras.

**Keywords :** Algebra

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[دانشگاه آزاد اسلامی، واحد رشت - سامانه بانک اطلاعات پایان نامه ها](#)