

Ciupală, Cătălin**Differential calculus on almost commutative algebras and applications to the quantum hyperplane.** (English) [Zbl 1110.81111](#)

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Differential graded (DG) ρ -algebras are defined as a generalization of DG algebras and DG superalgebras. The Lie operation on DG algebras is generalized to the notion of the Lie operation on DG ρ -algebras. Two examples of DG ρ -algebras are given: the algebra of forms $\Omega(A)$ of an almost commutative algebra A and the algebra of noncommutative differential forms $\Omega_\alpha(A)$ of a ρ -algebra A . Linear connections on a ρ -bimodule M over a ρ -algebra A are presented and extended to the space of forms from A to M . These notions are applied to the quantum hyperplane.

Reviewer: [Josef Janyška \(Brno\)](#)**MSC:**

- [81R60](#) Noncommutative geometry in quantum theory
- [16W50](#) Graded rings and modules (associative rings and algebras)
- [58C50](#) Analysis on supermanifolds or graded manifolds

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