



Leibniz algebras on symplectic plane and cohomological vector fields

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By using help of algebraic operad theory, Leibniz algebra theory and symplectic-Poisson geometry are connected. We introduce the notion of cohomological vector field defined on nongraded symplectic plane. It will be proved that the cohomological vector fields induce the finite dimensional Leibniz algebras by the derived bracket construction. This proposition is a Leibniz analogue of the cohomological field theory in the category of Lie algebras. The basic properties of the cohomological fields will be studied, in particular, we discuss a factorization problem with the cohomological fields and introduce the notion of double-algebra in the category of Leibniz algebras.

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