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Maurer-Cartan type cohomology on generalized Reynolds operators and NS-structures on Lie triple systems.

Abstract

We introduce the notion of generalized Reynolds operators on Lie triple systems as particular case of weighted Reynolds operator on Lie triple systems and we construct an L_∞ -algebra whose Maurer-Cartan elements are generalized Reynolds operators. By this fact, we define the Yamaguti cohomology of a generalized Reynolds operator. Moreover, we study deformations of generalized Reynolds operators from cohomological points of view and we investigate the obstruction class of an extendable deformation of order n . We end this paper by introducing a new algebraic structure, called NS-Lie triple system using a generalized Reynolds operator and we show that NS-Lie triple system can be constructed by NS-Lie algebra.