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Cohomology and formal deformations of left alternative algebras

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The purpose of this talk is to introduce an algebraic cohomology and formal deformation theory of left alternative algebras.

A left alternative (resp. right alternative) \mathbb{K} -algebra is a vector space \mathbb{A} over \mathbb{K} and a multiplication μ satisfying the left alternative identity, that is $\mu(x, \mu(x, y)) = \mu(\mu(x, x), y)$, (resp. right alternative identity, that is $\mu(\mu(x, y), y) = \mu(x, \mu(y, y))$). An alternative algebra is one which is both left and right alternative algebra. The alternative algebras are connected to other algebraic structures as Moufang loops, Malcev algebras, Jordan algebras and Yamaguti-Lie algebras called also generalized Lie triple systems. For instance, an alternative algebra is a Jordan algebra relative to $x \cdot y = \mu(x, y) + \mu(y, x)$.