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) $K$-algebra is a vector space $A$ over $K$ and a multiplication $\mu$ 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 $x \cdot y = \mu(x,y) + \mu(y,x)$. 