

Meeting: 1001, Evanston, Illinois, SS 19A, Special Session on Algebraic Representations and Deformations

1001-17-257 **Michael R. Penkava*** (penkavmr@uwec.edu), Mathematics Department, University of Wisconsin-Eau Claire, 105 Garfield Avenue, Eau Claire, WI 54702-4004. *Deformations and Extensions of Infinity Algebras.*

Infinity algebras are a natural generalization of associative and Lie algebras, and are given by an infinite sequence of terms defining products of not just two, but an arbitrary number of elements. These structures arise as codifferentials of an appropriate coagebra, and therefore come equipped with a cohomology theory, which characterizes their deformation theory. The leading term of an infinity algebra is itself an infinity algebra structure; the remaining terms represent an extension of this structure. The study of the equivalence classes of extensions is essentially a deformation problem. In a series of papers with Alice Fialowski, we have been studying low dimensional examples of L-infinity algebras, with the aim of understanding the moduli space of all infinity algebras on a Z_2 -graded vector space of a fixed dimension, using cohomology as the main tool to construct extensions and miniversal deformations. I will present some of our recent results. (Received August 28, 2004)