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Chris A Magyar* (magyarca@uwec.edu), 106 Spruce Street, Eau Claire, WI 54703. *Mapping the moduli space of complex graded associative algebras through computer algebra systems.*

The moduli space of algebras on a certain vector space consists of all the isomorphism classes of algebras. We have been studying moduli spaces of complex associative \mathbb{Z}_2 -graded algebras, or algebras that have a decomposition into a direct sum of two subspaces, one called the *even* elements and the other the *odd* elements.

The approach we use to construct all the algebras is to consider extensions of an algebra on a lower dimensional space by an algebra structure on another lower dimensional space. This allows us to build moduli spaces of algebras from the knowledge of the structure of lower dimensional moduli spaces.

We use computer algebra systems to construct these graded algebras through representing them by *codifferentials*. These objects can easily be represented as lists that encode the entire multiplication structure of a particular algebra. Once we have all the codifferentials for a given space, we use code we have developed to calculate each algebra's deformations, thus mapping the moduli space.

Currently we are mapping the moduli space of the 2|3 graded space and working on converting our code from Maple to Sage. (Received September 26, 2017)