

1135-16-1440

Xin Tang* (xtang@uncfsu.edu), 1200 Murchison Road, Fayetteville, NC 28301. *Quantum Weyl-Polynomial Algebras and Their Localizations*. Preliminary report.

In this presentation, we present some preliminary results on a family of quantum Weyl-Polynomial algebras, which can be considered as the extensions of both quantum Weyl algebras and quantum polynomial algebras. We will establish some standard properties for these algebras. In particular, we will establish a criterion for the existence of simple localizations and study its implications. We will study the endomorphisms and automorphisms for these algebras and their localizations; as a matter of fact, we will identify some invariants for the purpose of characterizing bijective endomorphisms (i.e. automorphisms). Both the non-root of unity and the root of unity cases will be addressed. In the root of unity case, the method of discriminant is expected to play a critical role. Some generalizations and applications will be discussed as well. (Received September 22, 2017)