ELLIPTIC ALGEBRAS

RYO KANDA

This talk is based on joint work with Alex Chirvasitu and S. Paul Smith [CKS18, CKS19a, CKS19b, CKS19c].

In 1989, Feigin and Odesskii introduced a family of graded algebras called elliptic algebras, using certain elliptic solutions of the quantum Yang-Baxter equation with spectral parameter. The family contains an important class of algebras called Sklyanin algebras, which are known to be a typical example of higher-dimensional regular algebras.

In this talk, I will explain some of the important concepts, techniques, results, and conjectures in noncommutative algebraic geometry, including the ones developed in [ATVdB90], and present our recent results on Feigin-Odesskii's elliptic algebras from various perspectives.

References

[ATVdB90] M. Artin, J. Tate, and M. Van den Bergh, *Some algebras associated to automorphisms of elliptic curves*, The Grothendieck Festschrift, Vol. I, Progr. Math., vol. 86, Birkhäuser Boston, Boston, MA, 1990, pp. 33–85. MR 1086882

[CKS18] Alex Chirvasitu, Ryo Kanda, S. Paul Smith, *Feigin and Odesskii's elliptic algebras*, arXiv:1812.09550v2.

[CKS19a] Alex Chirvasitu, Ryo Kanda, S. Paul Smith, *The characteristic variety for Feigin and Odesskii's elliptic algebras*, arXiv:1903.11798v3.

[CKS19b] Alex Chirvasitu, Ryo Kanda, S. Paul Smith, *Finite quotients of powers of an elliptic curve*, arXiv:1905.06710v2.

[CKS19c] Alex Chirvasitu, Ryo Kanda, S. Paul Smith, *Maps from Feigin and Odesskii's elliptic algebras to twisted homogeneous coordinate rings*, arXiv:1908.06525v1.

Department of Mathematics, Graduate School of Science, Osaka City University, 3-3-138, Sugimoto, Sumiyoshi, Osaka, 558-8585, Japan

Email address: ryo.kanda.math@gmail.com