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Chelesa Walton and **Xingting Wang*** (xingting@temple.edu), Department of Mathematics, Wachman Hall (038-16), 1805 N. Broad Street, Philadelphia, PA 19122-6094, and **Milen Yakimov**. *Representations of 4-dimensional Sklyanin algebras through Poisson geometry.*

In 1982, Sklyanin constructed a certain noncommutative graded algebra $A(E, \tau)$ depending on an elliptic curve E embedded in \mathbb{P}^3 and a point $\tau \in E$ related to the Yang-Baxter equation in “quantum inverse scattering method”. It was shown by Smith and Stafford that these so-called 4-dimensional Sklyanin algebras have the same Hilbert series as the polynomial algebra on four variables and possess excellent homological property. When τ is torsion-free, Smith and Staniszkis proved that there are exactly 4-parametric families of non-trivial irreducible representations at each dimension of $k \geq 1$. In this talk, we give all irreducible representations of $A(E, \tau)$ when τ is of finite order $n > 4$ with the help of Poisson geometry and deformation quantization. This is a joint work of Chelsea Walton and Milen Yakimov. (Received February 17, 2018)