Classification of regular nets of conics

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A net of conics is an algebra of the form $k[x, y, z]/(f_1, f_2, f_3)$ where $f_1, f_2, f_3 \in k[x, y, z]_2$ are linearly independent homogeneous polynomials of degree 2. In this talk, we define a net of conics $k[x, y, z]/(f_1, f_2, f_3)$ regular if $f_1, f_2, f_3 \in k[x, y.z]_2$ form a regular sequence, that is, $k[x, y, z]/(f_1, f_2, f_3)$ is a complete intersection. Classification of nets of conics (over $\mathbb{C}$ and over $\mathbb{R}$) dates back to the work of Wall [5]. In this talk, we will classify regular nets of conics over an algebraically closed field of characteristic 0 up to isomorphism of algebras using techniques from noncommutative algebraic geometry [4] [3]. This research was motivated by classification of noncommutative conics [1], [2], which I will discuss if time permits.

References

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