Queen's Algebraic Geometry
— Seminar —

Noncommutative Resolutions of Discriminants of Reflection Groups

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Abstract

This is joint work with R-O. Buchweitz and E. Faber. Let W be subgroup of GL(V) generated by reflections. Let $S = k[V]$ be the polynomial ring and let $z \in S$ cut out the hyperplane arrangement of mirrors in V. The discriminant is the image of the hyperplane arrangement in the quotient V/W which is cut out by z^2. Let A be the skew group algebra $W \rtimes k[V]$. Let e be the idempotent of kG corresponding to the trivial representation. Our main result is that $\mathrm{End}_{Sw}(S/zS) = A/AeA$ forms a noncommutative resolution of the discriminant since it is Koszul, has global dimension $\dim V - 1$, and its centre $S^W/(z^2)$ is polynomial functions on the discriminant.

Monday 2 March 2015
16:30–17:30
319 Jeffery Hall