Queen's Algebraic Geometry
— Seminar —

Classifying determinantal formulae of polynomials

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Abstract

Given a polynomial f, a determinantal formula for f is a square matrix A over the same polynomial ring which has determinant equal to f. We are interested in classifying determinantal formulae for a given polynomial up to weak equivalence in the sense that two formulae are weakly equivalent when their cokernels are isomorphic. In this talk, I show how, in principle, the tools of deformation theory can be used to attack this problem. In particular, given a quasi-homogeneous polynomial f, I show how to construct a moduli space of determinantal formulae the cokernels of which are graded modules over the ring of f. I then give an example of the use of this technique to construct a moduli space of such formulae for the discriminant of the polynomial $x^4 + a_2x^2 + a_3x + a_4$.

Monday, October 27, 2008
4:30pm – 5:30pm
319 Jeffery Hall