

# Queen's Algebraic Geometry — Seminar —

## ON THE EQUATIONS DEFINING CERTAIN SECANT VARIETIES OF SEGRE VARIETIES

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### Abstract

The equations defining the secant varieties for Segre Products of two projective spaces are well known (and will be reviewed in the talk). For the product of three or more projective spaces, very little is known about these equations. Recently, B. Sturmfels has indicated that a knowledge of these equations would be of use in Algebraic Statistics. He has even formulated some conjectures for finding the equations of the first secant varieties of the Segre varieties.

In this talk we will find the equations for several infinite families of secant varieties of the Segre varieties. From our results it is also possible to deduce the entire minimal free resolution of the defining ideal in these cases. This is significantly more than knowing just the equations. It also follows from our approach that we deduce the degrees of these secant varieties, something which was not known before in many cases.

The report is on joint work with M.V. Catalisano (Genoa) and A. Gimigliano (Bologna).

Monday, January 16, 2006  
4:00pm – 5:00pm  
202 Jeffery Hall