

# Queen's Algebraic Geometry — Seminar —

## QUANTUM NILPOTENT ALGEBRAS AND SCHUBERT CELLS

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### Abstract

Quantized universal enveloping algebras of simple Lie algebras were studied in great detail in the last 25 years. By considering subalgebras of those De Concini, Kac, and Procesi defined quantizations of certain families of universal enveloping algebras of nilpotent Lie algebras. The latter are less well understood. We will discuss results for their spectra, and in particular a proof of a conjecture of Goodearl and Lenagan which implies that the spectra of these quantum nilpotent algebras are normally separated. We will also prove that these algebras are catenary which is a quantum counterpart of Gabber's theorem that enveloping algebras of finite-dimensional solvable Lie algebras are catenary. The algebras under question can be viewed as quantizations of the algebras of functions on Schubert cells. This gives a relation between their spectra and open Richardson varieties.

Monday 28 February 2011  
16:30 – 17:30  
319 Jeffery Hall