

# Queen's Algebraic Geometry — Seminar —

## SPHERICAL POLYNOMIALS AND THE SPECTRUM OF INVARIANT DIFFERENTIAL OPERATORS

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### Abstract

The algebra of invariant differential operators on a multiplicity-free representation of a reductive group has a concrete basis, usually referred to as the Capelli basis. The spectrum of the Capelli basis on spherical representations results in a family of symmetric polynomials (after  $\rho$ -shift) which has been studied extensively by Knop and Sahi since the early 90's. In this talk, we generalize some of the Knop-Sahi results to the symmetric superpair  $GL(m, 2n)/OSp(m, 2n)$ . As a side result, we show that the qualitative Capelli problem (in the sense of Howe-Umeda) for this superpair has an affirmative answer. This talk is based on an ongoing project with Siddhartha Sahi.

Monday 17 November 2014  
16:30–17:30  
319 Jeffery Hall