Queen's Algebraic Geometry — Seminar —

Generalizing the Horn recursion

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Abstract

The Horn recursion is a strange and interesting recursion on the set of non-vanishing Littlewood-Richardson numbers (the non-zero structure constants of the cohomology rings of Grassmannians). It was discovered in the context of a seemingly unrelated problem: given Hermitian matrices A, B, with given eigenvalues, what are the possible eigenvalues for $A + B$. In 1962, Horn conjectured a recursive solution to this problem, which was shown to be correct [Knutson-Tao '99] via a deep connection with the cohomology of Grassmannians [Klyachko '94]. I will discuss some recent work generalizing parts of this story. The main example will be the even dimensional quadric hypersurfaces. The cohomology of these spaces is straightforward to calculate, yet the recursion still has something interesting to say.

Monday, November 8, 2004
2:30pm – 3:30pm
422 Jeffery Hall