CMUP: Algebra, Combinatorics and Number Theory Seminar

DIA C de Combinatória

Sexta-feira, dia 8 de Abril de 2011
FCUP anfiteatro M029

Resumos das Palestras

11 horas **Olga Azenhas** Universidade de Coimbra
Some Littlewood-Richardson coefficient inequalities and their combinatoricst

Abstract: The ring of symmetric functions has a linear basis of Schur functions s_λ labelled by partitions λ. These functions appear, for instance, in representation theory as characters of irreducible representations of GLn and in geometry as representatives of Schubert classes for complex Grassmannians. A symmetric function is said to be Schur positive (or nonnegative) if its expansion in the Schur basis has only nonnegative integer coefficients. We consider certain differences of Schur function products of the form $s_\rho s_\lambda - s_\mu s_\nu$, where the ordered pair (rho,lambda) of partitions is constructed from the ordered pair of partitions (mu,nu) through a procedure introduced in [Fomin, Fulton, Li, Poon , Amer. J. Math. 127 (2005)], and redefined in [Bergeron, Biagioli and Rosas, J. Combin. Theory Ser. A 113 (2006)]. Schur positivity of an expression of this form is equivalent to some inequalities between Littlewood-Richardson coefficients. Schur functions and Littlewood-Richardson coefficients have remarkable combinatorial properties. We explore them in proving those inequalities for the case of some partition shapes. This is a joint work with Mercedes Rosas, Universidad de Sevilla.