Oberseminar zur Algebra und Algebraischen Kombinatorik

Mittwoch, 10. November 2004, 10-12 Uhr, Raum A410

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On the Kronecker Product $s_{(n-p,p)} * s_\lambda$

(This is a joint work with Rosa Orellana, Dartmouth College.)
The Kronecker product of two Schur functions s_λ and s_μ, denoted $s_\lambda * s_\mu$, is defined as the Frobenius characteristic of the tensor product of the irreducible representations of the symmetric group indexed by partitions of n, λ and μ, respectively. If $\lambda = (\lambda_1, \lambda_2, \ldots, \lambda_{\ell(\lambda)})$ is such that $\lambda_1 - \lambda_2 \geq 2p$, we show that the coefficients in the expansion of $s_{(n-p,p)} * s_\lambda$ do not depend on n and we give an algorithm for expanding the Kronecker product $s_{(n-p,p)} * s_\lambda$. The algorithm uses the Remmel-Whitney algorithm for multiplying Schur functions.

Time permitting we will give a simple combinatorial interpretation for the coefficient of s_ν in the Kronecker product $s_{(n-p,p)} * s_\lambda$ if $\ell(\lambda) \geq 2p-1$ or $\lambda_1 \geq 2p-1$; that is, if λ is not a partition inside the $2(p-1) \times 2(p-1)$ square.

Alle Interessierten sind herzlich eingeladen!