

1052-05-121

**Justin J. Lambright\***, Department of Mathematics, Lehigh University, Bethlehem, PA 18015. *A combinatorial interpretation of coefficients arising in the quantum polynomial ring.*

Let  $(\ell_1, \dots, \ell_n)$  and  $(m_1, \dots, m_n)$  be two weakly increasing sequences of positive integers. Then we can express the monomial  $x_{\ell_{u_1}, m_{v_1}} \cdots x_{\ell_{u_n}, m_{v_n}}$  in terms of the natural basis of the quantum polynomial ring  $A_n(q)$ , which consists of monomials of the form  $x_{\ell_1, m_{w_1}} \cdots x_{\ell_n, m_{w_n}}$  with  $w$  maximal in the double coset  $W_I w W_J$ . A combinatorial interpretation of the coefficients of the natural basis elements is given in terms of walks in the Bruhat order. (Received August 24, 2009)