The *q*-log-convexity of the Narayana polynomials of type *B*

William Y. C. Chen, Robert L. Tang, Larry X. W. Wang, and Arthur L. B. Yang

Abstract: We prove a conjecture of Liu and Wang on the q-log-convexity of the Narayana polynomials of type B. By using Pieri's rule and the Jacobi-Trudi identity for Schur functions, we obtain an expansion of a sum of products of elementary symmetric functions in terms of Schur functions with nonnegative coefficients. By the principal specialization this, leads to q-log-convexity. We also show that the linear transformation with respect to the triangular array of Narayana numbers of type B is log-convexity preserving..

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Keywords: q-log-convexity, Schur positivity, Pieri's rule, the Jacobi-Trudi identity, principal specialization, Narayana numbers of type B

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