



Mathematical Physics

The "boson polynomials" of Gel'fand basis and the analytic expression of Wigner's coefficients with multiplicity for the canonical basis of unitary groups

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In this paper we present the generating function method for the derivation of bosons polynomials of Gel'fand basis and Wigner coefficients for the canonical basis of $SU(n)$. We find a new analytic polynomial basis of $SU(4)$ with the exact number of summations, five only. We find also a new algebraic expression of Wigner coefficient with multiplicity for the canonical basis and the isoscalars factors of $SU(3)$ with only three summations.

Subjects: **Mathematical Physics (math-ph)**; Representation Theory (math.RT)

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