

Analytic Expression of Arbitrary Matrix Elements for Boson Exponential Quadratic Polynomial Operators

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Abstract: Making use of the transformation relation among usual, normal, and antinormal ordering for the multimode boson exponential quadratic polynomial operators (BEQPO's), we present the analytic expression of arbitrary matrix elements for BEQPO's. As a preliminary application, we obtain the exact expressions of partition function about the boson quadratic polynomial system, matrix elements in particle-number, coordinate, and momentum representation, and P representation for the BEQPO's.

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Key words: Boson exponential quadratic polynomial operator, matrix element, P representation, partition function of Boson quadratic polynomial system

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