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Development in phase space quantum mechanics for constructing different masses’ entangled state representation. (English) Zbl 1441.81118

Summary: For developing the phase space quantum mechanics we explore how to construct different masses’ entangled state representation with the use of the Weyl-Wigner correspondence. We shall adopt a new approach, which uses the Radon transform of two-mode Wigner operator in normally ordering form to realize our goal. As an application of the entangled state representation the new normally ordered generalized squeezing operator is derived. The technique of integration within ordered product of operators is fully used.

MSC:
81S30 Phase-space methods including Wigner distributions, etc. applied to problems in quantum mechanics
81P40 Quantum coherence, entanglement, quantum correlations
81R30 Coherent states
44A12 Radon transform
60E15 Inequalities; stochastic orderings

Keywords:
entangled state representation; different masses; Radon transform; new squeezing operator

Full Text: DOI

References:

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