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# Wigner Distribution Function and Husimi Function of a Kind of Squeezed Coherent State

FAN Hong-Yi and LIU Shu-Guang

Department of Materials Science and Engineering, University of Science and Technology of China, Hefei 230026, China
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Abstract: We find a new $\kappa$-parameter squeezed coherent state $|p,q\rangle_\kappa$ representation, which possesses well-behaved features, i.e., its Wigner function's marginal distribution in the "q-direction" and in the "p-direction" is the Gaussian form $\exp\{-\kappa(q'-q)^2\}$, and $\exp\{(p'-p)^2/\kappa\}$, respectively. Based on this, the Husimi function of $|p,q\rangle_\kappa$ is also obtained, which is a Gaussian broaden version of the Wigner function. The $|p,q\rangle_\kappa$ state provides a good representative space for studying various properties of the Husimi operator.

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Key words: Wigner function, Husimi function, squeezed coherent state, IWOP technique

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