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Quantum Properties of Two-Mode Squeezed Even and Odd Coherent States

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Abstract: Two new types of quantum states are constructed by applying the operator $s(\xi)=\exp(\xi^{*}ab-\xi a^{\dagger}b^{\dagger})$ on the two-mode even and odd coherent states. The mathematical and quantum statistical properties of such states are investigated. Various nonclassical features of these states, such as squeezing properties, the inter-mode photon bunching, and the violation of Cauchy-Schwarz inequality, are discussed. The Wigner function in these states are studied in detail.

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