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Nonlinear Two-Mode Squeezed Vacuum States as Realization of $SU(1,1)$ Lie Algebra

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Abstract: Nonlinear extensions of the two-mode squeezed vacuum states (NTMSVS's) are constructed and special cases of these states are discussed. We have constructed the NTMSVS's realization of $SU(1,1)$ Lie algebra. Two cases of the definition are considered for unitary and non-unitary deformation operator functions. Some nonclassical properties of these states are discussed.

Key Words: Non-classical field states, two-mode squeezed vacuum states, nonlinear two-mode coherent states, nonlinear pair coherent states, squeezing, two-mode $SU(1,1)$ lie algebra coherent states

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