Non-linear wave packet dynamics of coherent states of various symmetry groups

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Abstract: We present a comparative study of the non-linear wave packet dynamics of two-mode coherent states of the Heisenberg-Weyl group, the SU(1,1) group and the SU(2) group under the action of a model anharmonic Hamiltonian. In each case, we find certain generic signatures of non-linear evolution such as quick onset of decoherence followed by Schrödinger cat formation and revival. We also report important differences in the evolution of coherent states belonging to different symmetry groups.
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References and links