

Abstract Submitted
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Dynamics of two- and four- boson interactions in dressed vacuum states¹ ANDREW VIKARTOFSKY, ROBERT WAGNER, QICHANG SU, RAINER GROBE, Illinois State University — We analyze the spatial and temporal dynamics of virtual particles in the vacuum states of one-dimensional ϕ^2 - and ϕ^4 -model systems. The properties of the vacuum state for the ϕ^2 -system can be found analytically, which allows us to compute all spatial and temporal correlations exactly. The momentum distribution of the vacuum virtual pairs is examined as well as the spatial and temporal correlations between virtual particles for both systems. We argue that almost all of the vacuum's properties can be explained in the usual particles terms.

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