

Generalized quantum dynamics and nonlocality of interaction of atom with quantum field

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Abstract

The interaction of an atom with an electromagnetic vacuum was investigated within the formalism of the generalized quantum dynamics. It was shown that the polarization of an electromagnetic vacuum leads to the time nonlocality of this interaction. This effect becomes especially significant for muonic atoms. The operator of interaction between a muon and a nucleus field was constructed. © 2007 by Allerton Press, Inc.
