

RELATIVISTIC INVARIANCE  
AND MASS RENORMALIZATION  
IN QUANTUM FIELD THEORY

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S u m m a r y

Starting from the instant form of relativistic quantum dynamics for a system of interacting fields, where only the Hamiltonian and the boost operators carry interactions among ten generators of the Poincaré group, we propose a constructive way of ensuring the relativistic invariance (RI) in quantum field theory (QFT) with cutoffs in the momentum space. Our approach is based on an opportunity to separate a part in the primary Hamiltonian interaction, whose density in the Dirac (D) picture is the Lorentz scalar. In this work, we study the compatibility of the RI requirements as a whole, i.e., the fulfilment of the well-known commutations for these generators with the structure of mass counterterms in the total field Hamiltonian.