Renormalization of the Regularized Relativistic Electron-Positron Field

By Cora Uhlemann

GRIN Verlag. Paperback. Book Condition: New. Paperback. 68 pages. Dimensions: 8.0in. x 5.8in. x 0.1in.Bachelor Thesis from the year 2011 in the subject Mathematics - Miscellaneous, grade: 1, 0, Technical University of Munich, language: English, abstract: This thesis is motivated by questions arising in the eld of Mathematical Quantum Electrodynamics, the attempt of a proper mathematical description of Quantum Electrodynamics (QED). QED is the relativistic quantum eld theory of electrodynamics, which uni es Quantum Mechanics and Special Relativity in a consistent manner. From the mathematical point of view, QED is an abelian gauge theory with the symmetry group U(1) (phase factors) and the gauge eld mediating the interaction between the charged spin-12 elds is the electromagnetic eld. Aim of this thesis is the renormalization of the regularized relativistic electron positron eld together with a Coulomb interaction. The idea of the renormalization procedure is to compare the normal-ordered Hamiltonian with the original one. Choosing a conventional normal ordering, the change in Hamiltonian is given by a quadratic term. The choice of a suitable normal ordering amounts in a non-perturbative rede nition of the electronpositron states. This allows for the interpretation of change in the Hamiltonian as a certain renormalization. The proper...

Reviews

This composed ebook is wonderful. It really is writter in basic words rather than hard to understand. You may like the way the writer compose this pdf.

-- ***Ryder Nolan***

This book can be well worth a go through, and a lot better than other. It is writter in simple words and phrases and not confusing. Its been printed in an exceptionally simple way in fact it is merely right after i finished reading through this pdf by which basically changed me, modify the way i think.

-- ***Margot Carter V***