

ABOUT FERMION SELF-ENERGY
IN 3-DIMENSIONAL ELECTRODYNAMICS

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The fermion electromagnetic mass is evaluated in 3-dimensional electrodynamics in the first nonvanishing order of the N^{-1} approximation (N is the number of fermions in the model). It is established that, by proceeding from the self-energy integral in QED₃ in this approximation, one can obtain the quantum result for fermion electromagnetic mass and the classical one as well. The electromagnetic mass of a particle has the quantum origin if its Compton wavelength satisfies the condition $\lambda_c \gg a$ (a is the scale parameters of the model which are the 'elementary length' r_0 and $8/\alpha$, $\alpha = e_0^2 N$, e_0^2 is a dimensional coupling constant in QED₃); the electromagnetic mass has the classical origin if $\lambda_c \ll a$. The obtained results are discussed.