

Against the point-like nature of physical electrons

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Experts in quantum field theory (QFT) generally answer the question of the “size of an electron” with “point-like”. On the other hand, QFT recognizes quantum effects, shielding by virtual particles, the so-called polarization cloud, which should describe the size of physical electrons. Scattering experiments with electrons, such as those carried out in high-energy experiments at particle accelerators, should be able to clarify whether physical electrons are really point-like, as claimed by experts and in textbooks. I show that both the formulas of QFT and the corresponding cross sections are consistent with an extent of the electron of the size of the classical electron radius. According to current knowledge, electrons have no substructure.

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