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Higher-order QED effects in elastic lepton-nucleon scattering

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14:15

Minkowski room

Abstract

In my talk I will focus on our recent studies of charge- and spin-dependent contributions to elastic lepton-nucleon scattering. More specifically, I will present model-independent charge asymmetry predictions [1] for scattering of unpolarized and massive leptons on proton target in connection to the future MUSE experiment at PSI. Moreover, I will show estimations of effects due to t-channel exchanges of scalar mesons [2], which will make a difference in the comparison of elastic electron-proton vs muon-proton scattering in MUSE. Finally, I will present our model calculations of target-normal single-spin asymmetries in elastic lepton-nucleon scattering [3].

[1] O. Koshchii, A. Afanasev, Phys. Rev. D 96, p. 016005 (2017).

[2] O. Koshchii, A. Afanasev, Phys. Rev. D 94, p. 116007 (2016).

[3] O. Koshchii, A. Afanasev (in preparation).