



Contribution ID : 871

Type : Oral talk

Energy interval (1S-2S) in muonic ions of lithium, beryllium and boron

Tuesday, 6 October 2020 18:20 (15)

In the framework of the quasipotential method in quantum electrodynamics, the energy interval (1S-2S) in muonic ions of lithium, beryllium and boron is calculated. We take into account corrections of fifth and sixth orders in fine structure constant, which are determined by relativistic effects, the effects of vacuum polarization, nuclear structure and recoil, as well as combined corrections including listed. Nuclear structure effects are expressed in terms of the charge radius of the nuclei in the case of one-photon interaction and the electromagnetic form factors of the nuclei in the case of two-photon interaction. The obtained numerical values of the energy interval (1S-2S) can be used for a comparison with future experimental data and for more accurate determination of the nucleus charge radii.

Primary author(s) : MARTYNENKO, Alexei (Samara U.)

Co-author(s) : DOROKHOV, Alexander; FAUSTOV, Rudolf; MARTYNENKO, Fedor

Presenter(s) : MARTYNENKO, Alexei (Samara U.)

Session Classification : HEP theory

Track Classification : HEP theory