

# Nuclear recoil effect on the g factor of boron-like ions

*Monday, 19 September 2016 18:00 (2 hours)*

Investigation of the g factor is one of the most accurate tools for testing physical theories and for determination of fundamental constants. Considerable progress was made recently with experiments with light ions. Moving to the high-Z sector potentially gives new opportunities for precision investigations of the atomic g factor. Further research in this field requires rigorous theoretical consideration of nuclear effects. We present the relativistic calculation of the nuclear recoil correction to the g factor of B-like ions, as an extension of our previous non-relativistic work [1]. The inter-electronic interaction is taken into account to the first order in  $1/Z$  and higher orders are accounted for with screening potential. The low-order relativistic approximation is derived from the QED theory of the nuclear recoil effect [2].

[1] A. A. Shchepetnov et al., J. Phys. Conf. Ser. 583, 012001 (2015)

[2] V. M. Shabaev, Phys. Rev. A 64, 052104 (2001)

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