ERRATA

Erratum: Scattering of positrons by hydrogen in a modified Glauber method [Phys. Rev. A 16, 1736 (1977)]

T. T. Gien

PACS number(s): 34.90.+q, 34.80.−i, 99.10.+g

The Born values of Table III were misprinted. They should be 11.27 (50 eV), 7.072 (100 eV), and 4.186 (200 eV).

Erratum: Variational calculation for the ground state of lithium and QED corrections for Li-like ions [Phys. Rev. A 44, R6973 (1991)]

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PACS number(s): 31.20.Di, 31.30.Jv, 99.10.+g

An error was made in adding up the two-electron contributions to obtain the unnumbered equations for $Q(1s^2 2s)$ and $Q(1s^2 2p)$ following Eq. (14). The correct equations are the following:

$$Q(1s^2 2s) = -\langle \delta(\mathbf{r}_{i,j}) \rangle (\ln Z + \tfrac{4}{89}\ln 3 + \tfrac{79}{89}\ln 2 - 1) + 0.014\,46 Z^3 + O(Z^2) ,$$

$$Q(1s^2 2p) = -\langle \delta(\mathbf{r}_{i,j}) \rangle (\ln Z + \tfrac{4}{251}\ln 3 + \tfrac{241}{251}\ln 2 - 1) + 0.017\,62 Z^3 + O(Z^2) .$$

The correction has a slight effect on the numerical results tabulated in Tables III and IV. In Table III, the entry $-\Delta E_{L,2}$ becomes 0.000 000 12(10) a.u., making the total nonrelativistic energy for the ground state of lithium −7.478 060 43(20) a.u. The corrected entries for Table IV are shown in full below. The differences in column four and the comparison with experiment are not significantly affected. We are grateful to G. Feldman and T. Fulton for pointing out this error.

Also, there is a transcription error in Eq. (8). It should read

$$\sigma = -(A_1 B_0 - A_0 B_1)/(2B_0^2) . \tag{8}$$

TABLE IV. Calculated QED corrections (excluding finite-nuclear-size effects) for the $1s^2 2s\ ^2S_{1/2}$ and $1s^2 2p\ ^2P_{1/2}$ states of Li-like ions (in 10^{-3} a.u.), relative to $1s^2\ ^1S$.

Z	$2\ ^2S_{1/2}$[a]	$2\ ^2P_{1/2}$	Difference	Experiment[b]
7	0.106	−0.0264	0.133	0.14(1)
8	0.188	−0.0401	0.228	0.22(1)
9	0.307	−0.0576	0.365	0.36(2)
10	0.471	−0.0794	0.550	0.52(1)
11	0.688	−0.107	0.794	0.76(2)
13	1.32	−0.176	1.49	1.42(2)
15	2.28	−0.269	2.55	2.52(6)
17	3.64	−0.390	4.03	3.89(6)
20	6.55	−0.657	7.21	7.06(4)
22	9.40	−0.828	10.23	9.83(4)
24	12.9	−1.06	13.9	13.4(1)
26	17.2	−1.33	18.5	18.0(1)
28	22.4	−1.63	24.0	23.4(4)
36	54.8	−3.04	57.9	56.8(4)

[a]The $2\ ^2S_{1/2}$ values for $Z=4$, 5, and 6 are 0.0070, 0.0226, and 0.0535 a.u., respectively.

[b]Difference between the many-body perturbation-theory (MBPT) result [1], which includes finite-nuclear-size corrections, and the measured transition frequency.

[1] W. R. Johnson, S. A. Blundell, and J. Sapirstein, Phys. Rev. A 37, 2764 (1988).

