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Erratum

Corrigendum to the article "Ab initio properties of gaseous helium" [C. R. Physique 10 (2009) 859–865]

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An error in the code used to calculate the helium properties was recently discovered. This error caused the relativistic-retardation to be applied incorrectly. The results in Table 2 can be corrected by adding quantities Δ_x to property x. The corrections can be expressed in terms of quadratic polynomials

$$p_x(\tau) = a_0 + a_1\tau + a_2\tau^2 \tag{1}$$

where $\tau \equiv \log_{10}(T/\mathrm{K})$. For the density and acoustic virials, the correction can be calculated from

$$\Delta_x = \left[b_x + 10^{p_x(\tau)}\right] \mathrm{cm}^3\,\mathrm{mol}^{-1} \tag{2}$$

Corrections for the viscosity and thermal conductivity are of the form $\Delta_x = p_x(\tau)$. The coefficients in these expressions are listed in Table 1. The correction will shift the baseline for the plots in Fig. 2 and in the lower panels of Figs. 1 and 3.

Table 1
Coefficients in Eqs. (1) and (2).

Quantity	b_x	a_0	a_1	a_2	Units
B (^{4}He)	−0.000108	0.2405	−1.2187	0.0686	–
B (^{3}He)	−0.000041	0.1177	−1.0822	0.0338	–
β_a (^{4}He)	−0.000131	0.2951	−1.196	0.066	–
β_a (^{3}He)	−0.0000592	0.1796	−1.0625	0.0314	–
η (^{4}He)	–	0.000862	−0.00020	−0.00009	μPa s
η (^{3}He)	–	0.00205	−0.00161	0.000268	μPa s
λ (^{4}He)	–	0.00701	−0.00166	−0.0007	m W m^{-1} K^{-1}
λ (^{3}He)	–	0.0204	−0.0172	0.0032	m W m^{-1} K^{-1}

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