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Corrigendum

Corrigendum: Semianalytical wavefunctions and Kohn–Sham exchange–correlation potentials for two-electron atomic systems in two-dimensions (2020 *J. Phys. B: At. Mol. Opt. Phys.* **53** 035001)

Rabeet Singh[1,*], **Ashish Kumar**[2], **Manoj K Harbola**[2] and **Prasanjit Samal**[3]

[1] Department of Physics, Institute of Science, Banaras Hindu University, Varanasi, 221 005, India
[2] Department of Physics, Indian Institute of Technology Kanpur, Kanpur-208016, India
[3] School of Physical Sciences, National Institute of Science Education and Research, Homi Bhabha National Institute, Bhubaneswar 752050, India

E-mail: rabeet@bhu.ac.in, ashishkr@iitk.ac.in, mkh@iitk.ac.in and psamal@niser.ac.in

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Recently, we proposed accurate forms of the wavefunction for two-electron atomic systems in two-dimensions and calculated the exchange–correlation potentials for these systems using the Levy–Perdew–Sahni (LPS) equation. As a part of this work, we reported the results for the chemical potentials (μ) calculated by solving the LPS equation

$$\left[-\frac{1}{2}\nabla^2 + v_{\rm ext}(\vec{r}) + v_{\rm eff}^{\rm LPS}(\vec{r})\right]\rho^{1/2}(\vec{r}) = \mu\rho^{1/2}(\vec{r}),$$

directly. For this, we construct the effective potential $v_{\rm eff}^{\rm LPS}(\vec{r})$ for Le Sech and modified Le Sech wavefunction, and then solve the LPS equation to get the chemical potential and density (ρ). The values so obtained for μ for the modified Le Sech wavefunctions given in table 7 of this paper are not correct. In this erratum, we correct these and give table 7 of the paper mentioned above with updated values of μ for the modified Le Sech wavefunctions

ORCID iDs

Rabeet Singh https://orcid.org/0000-0001-5657-057X
Ashish Kumar https://orcid.org/0000-0001-5169-2754

* Author to whom any correspondence should be addressed.

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Table 7. Chemical potential μ calculated using equation (13) of the above mentioned paper, the difference $E_2 - E_1$ with $E_1 = -2Z^2$, and the highest occupied orbital eigenvalues in Kohn–Sham equation using AMGB and PRM correlation functionals with LDA exchange functional for Coulomb external potential.

	Le Sech		Modified Le Sech			
Z	μ	$E_2 - E_1$	μ	$E_2 - E_1$	PRM	AMGB
1	−0.2371	−0.2338	−0.2377	−0.2359	−0.0370	−0.0525
2	−3.9091	−3.8880	−3.9104	−3.8924	−3.1641	−3.2038
3	−11.5698	−11.5350	−11.5709	−11.5399	−10.2891	−10.3382
4	−23.2264	−23.1784	−23.2267	−23.1836	−21.4130	−21.4674
5	−38.8809	−38.8198	−38.8803	−38.8253	−36.5365	−36.5943
6	−58.5338	−58.4598	−58.5323	−58.4655	−55.6597	−55.7199
7	−82.1858	−82.0985	−82.1831	−82.1044	−78.7826	−78.8446
8	−109.8368	−109.7361	−109.8326	−109.7423	−105.9053	−105.9687
9	−141.4869	−141.3727	−141.4812	−141.3792	−137.0277	−137.0923
10	−177.1362	−177.0081	−177.1288	−177.0151	−172.1500	−172.2155