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Errata

Erratum: Effect of ground-state electron correlation on the $(e,2e)$ reaction spectroscopy of $H_2(^1\Sigma_g^+)$

[Phys. Rev. A 31, 3003 (1985)]

J. W. Liu and Vedene H. Smith, Jr.

Because of a computational error in the evaluation of the normalization constants for the residual ion wave function for the $2p\pi_u$ and $3p_u$ transitions, the values involved with those transitions in Table I should be replaced with those given here. The values in the corrected Table I may be used to construct corrected Tables III and IV. The corrected tables may be obtained by writing to the authors (Department of Chemistry, Queen's University, Kingston, Ontario, Canada K7L 3N6).

On page 3009, right column, line 7 from bottom, the last two sentences should be replaced, as follows. The experimental value for $0.37 > q > 0.27$ a.u. is smaller by about 10% than the theoretical value, while for $0.67 > q > 0.65$ a.u. the experimental value is larger than the theoretical value by 28%. The absolute cross-section ratio for $1s\sigma_g$:$2s\sigma_g$:$2p\pi_u$:$2p\sigma_u$ at $q = 0.3$ a.u. calculated from the CI DJ wave function is 1:0.0258:0.0003:0.0004. However, the ratio from the experiments of Weigold *et al.*[18] is 1:0.016:0.002:0.005.

On page 3010, left column, line 8, change 0.00011 to 0.005.

The last sentence of Sec. III should be deleted.

No other conclusions or comments in this paper are affected.

TABLE I. Values of $O_{\mathrm{if}}(q)$ for various transitions: $H_2(e,2e)H_2{}^+$ calculated using a SCF and the DJ and HS CI wave functions.

	$2p\pi_u$		$3p\pi_u$	
q	DJ	HS	DJ	HS
0.000 00	0.000 00	0.000 00	0.000 00	0.000 00
0.050 00	$0.809\,22\times 10^{-5}$	$0.727\,48\times 10^{-5}$	$0.118\,89\times 10^{-5}$	$0.114\,40\times 10^{-5}$
0.100 00	$0.316\,95\times 10^{-4}$	$0.284\,83\times 10^{-4}$	$0.464\,58\times 10^{-5}$	$0.448\,02\times 10^{-5}$
0.150 00	$0.701\,56\times 10^{-4}$	$0.626\,94\times 10^{-4}$	$0.102\,80\times 10^{-4}$	$0.986\,26\times 10^{-5}$
0.200 00	$0.121\,67\times 10^{-3}$	$0.108\,06\times 10^{-3}$	$0.178\,20\times 10^{-4}$	$0.170\,02\times 10^{-4}$
0.250 00	$0.183\,82\times 10^{-3}$	$0.162\,29\times 10^{-3}$	$0.269\,07\times 10^{-4}$	$0.255\,40\times 10^{-4}$
0.300 00	$0.253\,42\times 10^{-3}$	$0.222\,71\times 10^{-3}$	$0.370\,77\times 10^{-4}$	$0.350\,59\times 10^{-4}$
0.350 00	$0.326\,74\times 10^{-3}$	$0.286\,47\times 10^{-3}$	$0.477\,84\times 10^{-4}$	$0.451\,10\times 10^{-4}$
0.400 00	$0.399\,79\times 10^{-3}$	$0.350\,70\times 10^{-3}$	$0.584\,51\times 10^{-4}$	$0.552\,43\times 10^{-4}$
0.450 00	$0.468\,71\times 10^{-3}$	$0.412\,68\times 10^{-3}$	$0.685\,16\times 10^{-4}$	$0.650\,34\times 10^{-4}$
0.500 00	$0.530\,13\times 10^{-3}$	$0.470\,01\times 10^{-3}$	$0.774\,97\times 10^{-4}$	$0.741\,01\times 10^{-4}$
0.550 00	$0.581\,50\times 10^{-3}$	$0.520\,69\times 10^{-3}$	$0.850\,23\times 10^{-4}$	$0.821\,30\times 10^{-4}$
0.600 00	$0.621\,23\times 10^{-3}$	$0.563\,19\times 10^{-3}$	$0.908\,62\times 10^{-4}$	$0.888\,78\times 10^{-4}$
0.650 00	$0.648\,68\times 10^{-3}$	$0.596\,48\times 10^{-3}$	$0.949\,19\times 10^{-4}$	$0.941\,83\times 10^{-4}$
0.700 00	$0.664\,06\times 10^{-3}$	$0.620\,05\times 10^{-3}$	$0.972\,21\times 10^{-4}$	$0.979\,61\times 10^{-4}$
0.750 00	$0.668\,24\times 10^{-3}$	$0.633\,85\times 10^{-3}$	$0.978\,89\times 10^{-4}$	$0.100\,20\times 10^{-3}$
0.800 00	$0.662\,50\times 10^{-3}$	$0.638\,23\times 10^{-3}$	$0.971\,04\times 10^{-4}$	$0.100\,95\times 10^{-3}$
0.850 00	$0.648\,34\times 10^{-3}$	$0.633\,85\times 10^{-3}$	$0.950\,84\times 10^{-4}$	$0.100\,32\times 10^{-3}$
0.900 00	$0.627\,31\times 10^{-3}$	$0.621\,65\times 10^{-3}$	$0.920\,54\times 10^{-4}$	$0.984\,49\times 10^{-4}$
0.950 00	$0.600\,94\times 10^{-3}$	$0.602\,72\times 10^{-3}$	$0.882\,31\times 10^{-4}$	$0.955\,09\times 10^{-4}$
1.000 00	$0.570\,58\times 10^{-3}$	$0.578\,23\times 10^{-3}$	$0.838\,17\times 10^{-4}$	$0.916\,83\times 10^{-4}$
1.100 00	$0.502\,62\times 10^{-3}$	$0.517\,32\times 10^{-3}$	$0.739\,03\times 10^{-4}$	$0.821\,19\times 10^{-4}$
1.200 00	$0.431\,19\times 10^{-3}$	$0.447\,81\times 10^{-3}$	$0.634\,51\times 10^{-4}$	$0.711\,58\times 10^{-4}$
1.300 00	$0.361\,63\times 10^{-3}$	$0.376\,95\times 10^{-3}$	$0.532\,51\times 10^{-4}$	$0.599\,47\times 10^{-4}$
1.400 00	$0.297\,37\times 10^{-3}$	$0.309\,87\times 10^{-3}$	$0.438\,11\times 10^{-4}$	$0.493\,09\times 10^{-4}$
1.500 00	$0.240\,36\times 10^{-3}$	$0.249\,70\times 10^{-3}$	$0.354\,21\times 10^{-4}$	$0.397\,45\times 10^{-4}$
1.600 00	$0.191\,38\times 10^{-3}$	$0.197\,89\times 10^{-3}$	$0.282\,03\times 10^{-4}$	$0.314\,95\times 10^{-4}$
1.700 00	$0.150\,45\times 10^{-4}$	$0.154\,67\times 10^{-3}$	$0.221\,61\times 10^{-4}$	$0.246\,04\times 10^{-4}$
1.800 00	$0.116\,99\times 10^{-3}$	$0.119\,53\times 10^{-3}$	$0.172\,18\times 10^{-4}$	$0.189\,95\times 10^{-4}$

TABLE I. (*Continued*).

1.900 00	$0.901\,63\times 10^{-4}$	$0.915\,32\times 10^{-4}$	$0.132\,52\times 10^{-4}$	$0.145\,24\times 10^{-4}$
2.000 00	$0.689\,87\times 10^{-4}$	$0.695\,87\times 10^{-4}$	$0.101\,20\times 10^{-4}$	$0.110\,20\times 10^{-4}$
2.200 00	$0.397\,57\times 10^{-4}$	$0.396\,10\times 10^{-4}$	$0.579\,97\times 10^{-5}$	$0.623\,68\times 10^{-5}$
2.400 00	$0.226\,22\times 10^{-4}$	$0.222\,82\times 10^{-4}$	$0.327\,47\times 10^{-5}$	$0.348\,08\times 10^{-5}$
2.600 00	$0.128\,06\times 10^{-4}$	$0.124\,85\times 10^{-4}$	$0.183\,61\times 10^{-5}$	$0.193\,13\times 10^{-5}$
2.800 00	$0.725\,09\times 10^{-5}$	$0.700\,81\times 10^{-5}$	$0.102\,84\times 10^{-5}$	$0.107\,17\times 10^{-5}$
3.000 00	$0.412\,26\times 10^{-5}$	$0.395\,66\times 10^{-5}$	$0.577\,80\times 10^{-6}$	$0.597\,43\times 10^{-6}$
3.200 00	$0.236\,00\times 10^{-5}$	$0.225\,31\times 10^{-5}$	$0.326\,72\times 10^{-6}$	$0.335\,71\times 10^{-6}$
3.400 00	$0.136\,28\times 10^{-5}$	$0.129\,67\times 10^{-5}$	$0.186\,37\times 10^{-6}$	$0.190\,62\times 10^{-6}$
3.600 00	$0.795\,10\times 10^{-6}$	$0.755\,15\times 10^{-6}$	$0.107\,44\times 10^{-6}$	$0.109\,58\times 10^{-6}$
3.800 00	$0.469\,19\times 10^{-6}$	$0.445\,53\times 10^{-6}$	$0.627\,00\times 10^{-7}$	$0.638\,64\times 10^{-7}$
4.000 00	$0.280\,33\times 10^{-6}$	$0.266\,51\times 10^{-6}$	$0.370\,87\times 10^{-7}$	$0.377\,85\times 10^{-7}$

Erratum: Laser-induced autoionizinglike behavior, population trapping, and stimulated Raman processes in real atoms

[Phys. Rev. A 36, 5205 (1987)]

Bo-nian Dai and P. Lambropoulos

In the course of further work extending the scope of our calculations, we have discovered an inconsistency in our use of the Green's function to perform the summation over intermediate states in a particular two-photon matrix element. Specifically, the denominator appearing in the formal equation

$$D_{ga}^{(2)}=\sum_{l}\frac{D_{g\bar{l}}D_{\bar{l}a}}{\tilde{E}_g-\tilde{E}_l}$$

was inconsistent with the denominator $\tilde{E}_l-\tilde{E}_g$ in our computer program. Either denominator is correct, provided the appropriate sign is placed in front of the summation. This inconsistency did not affect other two-photon matrix elements in our paper, because a different computer program was employed in their numerical calculation.

As a result of this inconsistency, we had obtained an erroneous negative value -4.3 for the q parameter corresponding to the experiment of Heller *et al.* (Ref. 2). The correct value, resulting after removal of the inconsistency, is $q=+6.4$, which now is in excellent agreement with the experimental value of Heller *et al.* (Ref. 2). The only thing that changes in the figures of the paper is the symmetry of the ionization line shape [Fig. 1(a)], which essentially retains its form but appears reversed (reflected with respect to a vertical axis through $\delta=0$). The curves of Figs. 2(b) and 2(c) are affected only slightly.

None of the conclusions of the paper is affected. All the points we emphasized about the importance of ionization as depletion, the short-term population trapping, and the importance of the term $D_{ga}^{(2)}$ remain value and are, if anything, strengthened. It is in fact the magnitude of $D_{ga}^{(2)}$ as compared to the principal-value part over the continuum that makes the sign of q so sensitive to the sign of $D_{ga}^{(2)}$, whose value is 80.42 while the principal-value part is 0.017. If one were to neglect $D_{ga}^{(2)}$ the resulting value of q for the experiment of Heller *et al.* would be about 0.01.

It is thus a curious coincidence that our numerical inconsistency inadvertently provided a dramatic illustration of the importance of $D_{ga}^{(2)}$, which is one of the points we had emphasized.

Erratum: Resonant multiphoton ionization of atomic hydrogen

[Phys. Rev. A 37, 4694 (1988)]

Y. Gontier, N. K. Rahman, and M. Trahin

We would like to add the following to the Acknowledgment section of our paper.

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