Errata

Erratum: Elastic scattering of electrons from Ar and Kr in the second-order eikonal approximation [Phys. Rev. A 15, 935 (1977)]

A. C. Roy and N. C. Sil

From a private communication we have learned that the unit of the partial-wave cross sections published by Fink and Yates (Ref. 12) is in units of Å^2 instead of the misprinted a_0^2. This would seriously affect the magnitudes of cross sections presented in our paper in the last columns of Tables I and II as well as in Figs. 1–4; in fact, all these cross-section values should be multiplied by a factor of $\text{Å}^2/a_0^2$. This would mean that Baker's second-order eikonal approximation turns out to be inferior to Glauber's first-order eikonal approximation throughout the energy and angular ranges considered in this work.

Erratum: Time and spectral resolution in resonance scattering and resonance fluorescence [Phys. Rev. A 15, 1588 (1977)]

E. Courtens and A. Szöke

Typographical errors appear in Eq. (60a): there should be a double integration sign from $-\infty$ to $+\infty$ and the argument of the second Θ function is $t-t''$ instead of $t'-t''$. In addition the paragraph following Eq. (61) should read:

The instantaneous intensity is always finite for a pulse. Using the Fourier-transform relation,

$$I(t;\omega_1,\alpha)=|V(t)|^2=\frac{1}{(2\pi)^2}\int_{-\infty}^{+\infty}\int_{-\infty}^{+\infty}d\omega\,d\omega'\,v(\omega)v^*(\omega')e^{-i(\omega-\omega')t} \tag{60b}$$

the *filtered spectrum* is defined as

$$I(\omega_1,\alpha)\equiv\int dt\,I(t;\omega_1,\alpha)=\frac{1}{2\pi}\int_{-\infty}^{+\infty}d\omega\,|e(\omega)|^2|f(\omega)|^2$$

which is just $|v(\omega)|^2$ and whose limit is in accordance with the usual definition of the power spectrum as follows,

$$I(\omega_1)\equiv\lim_{\alpha\to 0}\frac{1}{\alpha}I(\omega_1,\alpha)=|e(\omega_1)|^2\ . \tag{62a}$$

None of the subsequent results are affected by these corrections.

It is useful to make an additional comment on Eq. (61). For α tending to zero (meaning that the filter bandwidth becomes very narrow), one finds that the time derivative of $I(t;\omega_1,\alpha)$ becomes proportional to the so-called *instantaneous power spectrum* as defined by Page.[1] The reason for this is that the narrow filter integrates the signal. One obtains

$$\lim_{\alpha\to 0}\frac{1}{\alpha^2}I'(t;\omega_1,\alpha)=2\,\mathrm{Re}\int_0^\infty E(t)E^*(t-\tau)e^{i\omega_1\tau}\,d\tau$$

which is Page's definition. These facts have been recently discussed by J. H. Eberly and K. Wódkiewicz[2] and we are grateful to Professor Eberly for pointing out the errors in Eq. (60b).

[1] C. H. Page, J. Appl. Phys. 23, 103 (1952).
[2] J. H. Eberly and K. Wódkiewicz, J. Opt. Soc. Am. 67, 1252 (1977).