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Erratum

Erratum to "The hemispherical deflector analyser revisited. I. Motion in the ideal 1/*r* potential, generalized entry conditions, Kepler orbits and spectrometer basic equation" [J. Electron. Spectrosc. Relat. Phenom. 125 (2002) 221–248]

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The publisher regrets that in Fig. 8 of the above paper, the figure in the bottom left panel was not reproduced properly. We have now reproduced Fig. 8 correctly on the following page.

We also correct misprints in the following equations.

Eq. (67) on p. 234 should correctly read:

$$\Delta t(\omega_0, \delta) = t(\zeta(\omega_0 + \delta)) - t(\zeta_0) = \sqrt{\frac{ma^3}{qk}} \{[\zeta(\omega_0 + \delta) - \epsilon \sin \zeta(\omega_0 + \delta)] - (\zeta_0 - \epsilon \sin \zeta_0)\} \quad (67)$$

Eqs. (99) and (100) on p. 237 should correctly read:

$$r_\pi = \frac{r_0[qk + r_0(t - qc)]}{qk \tan^2 \alpha - r_0(t - qc)} \quad (99)$$

$$= -r_0 + \frac{r_0}{1 + \cos^2 \alpha \left\{ \frac{r_0}{R_0} \frac{\left[1 + \frac{\xi}{\gamma}(1-\tau)\right]}{1+\xi} - 1 \right\}} \quad (100)$$

Finally, the author would like to correct the statement appearing in Appendix B, Section 2. On p. 245, left column, penultimate paragraph, it is erroneously stated that:

. . .Now using Eq. (32), it can be readily shown that $\alpha_0^* = -\alpha_\pi^*$, i.e. the particle's entry angle $\alpha_0^* (\equiv \alpha^*)$ and exit angle α_π^* are equal to within a sign contrary to the relation between α_0 and α_π which are only equal if $r_0 = r_\pi$ (see Eq. (32)).

Using Eqs. (32) and (B.24) evaluated at the exit radius r_π and the conservation of angular momenta L and L^* it can be readily shown that in fact the relation between α_π^* and α_0^* is the *same* as the relation between α_0 and α_π (see Eq. (32)). Thus, we also have:

$$\tan \alpha_\pi^* = -\frac{r_\pi}{r_0} \tan \alpha_0^* \quad (32)$$

Clarification added in proof

As noted on p. 224 (top right column) and p. 241 (top left column under Eq. 109), all voltages V appearing in the review are referenced to *ground* and thus refer to the *actual* voltages $V_{\rm act}$ that should be placed on the electrodes in the laboratory. Electron-optic simulation voltages, $V_{\rm SIM}$, however, are defined by convention so that zero of potential is that for which the particle is at rest. Thus, for a particle of charge q, $V_{\rm SIM} = V_{\rm act} - qW$ [51], where W is the source energy of the central ray (in eV) as defined in Eq. (4) (also referred to as the undecelerated tuning energy). For example, the simulation voltages for the HDA electrodes given in Eq. 109 for electrons ($q = -|e|$) should then be given by: $V_{i\rm SIM} = V_i + W = w[2\frac{R_0}{R_i} - 1] \quad \text{for } i = 1, 2.$

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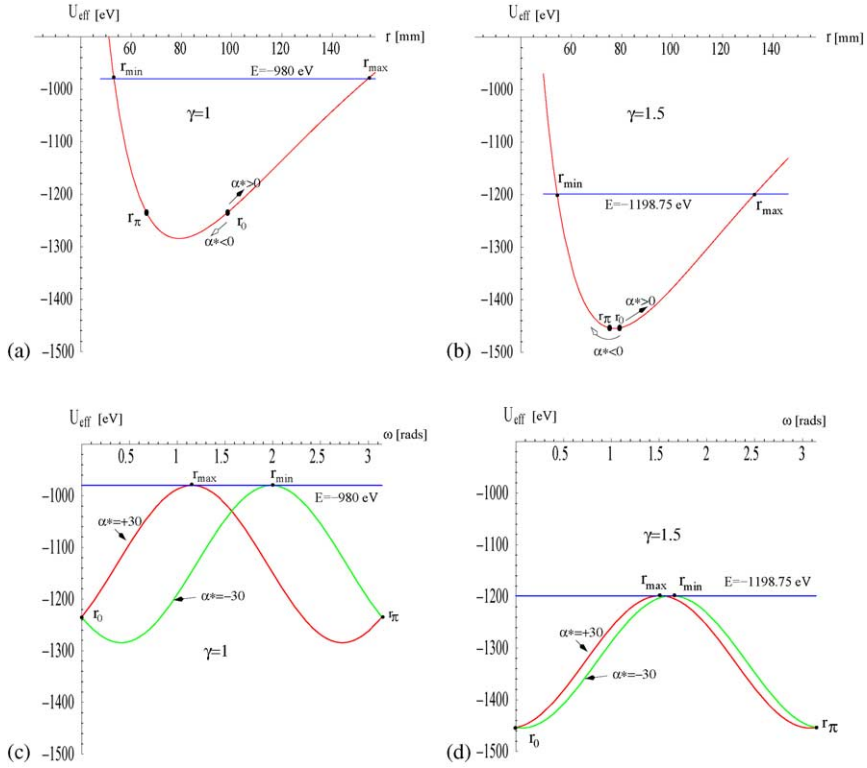

Fig. 8. Effective potential energy $U_{\text{eff}}(r(\omega))$ plotted as a function of $r(\omega)$ (top) and as a function of ω (bottom) for the cases of $a^* = \pm 30^\circ$ given in Table 2 with either $\gamma = 1$ (left) or $\gamma = 1.5$ (right). The horizontal line is the total effective energy E in each case. $U_{\text{eff}}(r)$ is the same for both angles $\alpha^* = \pm 30^\circ$ (top curves). The turning points $r_{\min}$ and $r_{\max}$ are shown. It is seen (darker lines in bottom figures) that for $\alpha^* > 0$ we also have $\frac{\partial r}{\partial \omega} > 0$, i.e. the particle follows an orbit in the direction of $r_{\max}$ according to Eq. (31), while for $\alpha^* < 0$ it follows a trajectory first going through $r_{\min}$. The arrows (top) point in the direction of motion from the starting point r_0.