

Erratum to “Eigenchannel method in quantum potential scattering” [Ann. Phys. 311 (2004) 503–540]

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Equation (6.29) should read

$$G^{(\pm)}(E, \mathbf{r}, \mathbf{r}') = G_0^{(\pm)}(E, \mathbf{r}, \mathbf{r}') - \int_{\mathbb{R}^3} d^3\mathbf{r}'' G_0^{(\pm)}(E, \mathbf{r}, \mathbf{r}'') \hat{V} G^{(\pm)}(E, \mathbf{r}'', \mathbf{r}'). \quad (6.29)$$

Equation (6.65) should read

$$X_\gamma(E, \mathbf{r}) \xrightarrow{r \rightarrow \infty} -\sqrt{\frac{2m}{\hbar^2 k}} \frac{1}{\sin \delta_\gamma(E)} \frac{\sin[kr + \varphi_\gamma(E) + \delta_\gamma(E)]}{r} |Y_\gamma(E, \mathbf{n})|. \quad (6.65)$$

Equation (7.48) should read

$$\mathcal{G}^{(\pm)}(E, \mathbf{r}, \mathbf{r}') = \mathcal{G}_0^{(\pm)}(E, \mathbf{r}, \mathbf{r}') - \int_{\mathbb{R}^3} d^3\mathbf{r}'' \mathcal{G}_0^{(\pm)}(E, \mathbf{r}, \mathbf{r}'') \hat{V} \mathcal{G}^{(\pm)}(E, \mathbf{r}'', \mathbf{r}'). \quad (7.48)$$

Equation (7.53) should read

$$\mathcal{G}^{(\pm)}(E, \mathbf{r}, \mathbf{r}') \xrightarrow{r' \rightarrow \infty} \frac{E}{2\pi c^2 \hbar^2} \frac{e^{\pm ikr'}}{r'} \sum_{i=1}^2 \Psi_i^{(\pm)}(E, \mp \mathbf{n}', \mathbf{r}) \mathcal{U}_i^\dagger(E, \mp \mathbf{n}'). \quad (7.53)$$

In addition, it should be emphasized that, in general, the phase $\varphi_\gamma(E)$ defined in Eq. (6.64) and used in Eq. (6.65), will depend on the unit vector \mathbf{n} as well, so it would be more appropriate to denote it as $\varphi_\gamma(E, \mathbf{n})$.

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