Errata sheet

This errata sheet lists errors and their correction for the master thesis of Dávid Juhász, titled "Modelling laser-matter interactions using resonant states", University in Tromsø.

Location	Error	Correction
Pages i,ii,28,34 ,63,64,73,92 ,101,119,143	all expression “scattering form of resonant states”	“scattering states”
Pages 4,7,9,14 ,27,43,43,45,47 ,48,49,50,57 ,93,94,96	all expression “ground state” or “ground states”	“bound state” or “bound states” respectively
Page 21	eqn. (2.69)	$\mathcal{O}(x)\Big\vert_{x=x_n} P(x_n) = a_2 + \varepsilon x_n a_0$
Page 24	egn. (2.81)	$\varphi'^{x_c^-} = i\varphi'^{x_c^+}$
Page 24	eqn. (2.83)	$\psi'^{x_c^-} = -i\psi'^{x_c^+}$
Page 25	eqn. (2.87)	the Hamiltonian should be $\pm\frac{\mathrm{d}^2}{\mathrm{d}x^2} - A\delta(x) - \varepsilon z(x)$
Pages 42,93,99	all expressions “energy field”	“laser field”
Page 48	“Assuming that the solution should decay for large negative and positive x, we need to put $a_1 = a_6 = 0$.”	“Assuming that the solution should decay for large negative and positive x, we need to put $a_2 = a_5 = 0$.”
Page 49	the matrix $\mathbf{M}$ in eqn. (3.15)	$\begin{pmatrix} e^{-k_1 d} & -\cos(k_2 d) & \sin(k_2 d) & 0 \\ k_1 e^{-k_1 d} & -k_2 \sin(k_2 d) & -k_2 \cos(k_2 d) & 0 \\ 0 & \cos(k_2 d) & \sin(k_2 d) & -e^{-k_1 d} \\ 0 & -k_2 \sin(k_2 d) & k_2 \cos(k_2 d) & k_1 e^{-k_1 d} \end{pmatrix}$
Page 49	eqn. (3.16)	$e^{-2dk_1}\left(\left(k_1^2-k_2^2\right)\sin(2dk_2)+2k_1k_2\cos(2dk_2)\right)=0$ $\frac{\left(k_1^2-k_2^2\right)}{2k_1k_2}+\cot(2dk_2)=0$ $\det\mathbf{M}(\omega)=\frac{2\gamma^2-V_0}{2\sqrt{\gamma^2(V_0-\gamma^2)}}+\cot\left(2d\sqrt{2(V_0-\gamma^2)}\right)=0$
Page 57 Page 57	eqn. (3.49) eqn. (3.50)	$\mathcal{O}(x)\Big\vert_{x=x_n} P(x_n)=a_2+\varepsilon x_n a_0, \quad \vert d\vert<x_n$ $\mathcal{O}(x)\Big\vert_{x=x_n} P(x_n)=a_2+(\varepsilon x_n+V_0)a_0, \quad \vert d\vert>x_n$