Principles of Plasma Diagnostics, Errata

Corrections to the second edition 2002, I.H.Hutchinson

Page	Erroneous version	Correct version
20	*Eq 2.1.17 reads* $\nu_{ei} \approx v_i \pi b_{90}^2 \ldots$	*Eq 2.1.17 should read* $\nu_{ei} \approx n_i v_i \pi b_{90}^2 \ldots$
34/5	which gives us $2\pi R$ times the normal derivative of the flux: $\hat{\mathbf{e}}_\phi.(\hat{\mathbf{n}} \wedge \mathbf{B}_p) = 2\pi R \hat{\mathbf{n}}.\nabla\psi$.	which gives us the normal derivative of the flux: $\hat{\mathbf{e}}_\phi.(\hat{\mathbf{n}} \wedge \mathbf{B}_p) = (2\pi R)^{-1} \hat{\mathbf{n}}.\nabla\psi$.
41	measurements of B_θ, $B_\psi \ldots$	measurements of B_θ, $B_\phi \ldots$
88	the tangential x-velocity $v_t = v_d \sin\theta$	the tangential x-velocity $v_t = v_d / \sin\theta$
113	*Labeling in Fig 4.1 reads* $\frac{2E_1E_2}{E_1^2+E_2^2}$	*Labeling in Fig 4.1 should read* $2E_1E_2$
137	*Eq 4.3.15 reads* $\ldots \frac{XY\cos\theta}{2(1-Y^2)} \frac{(F^2+1)^{1/2}}{F} \ldots$	*should read* $\ldots \frac{XY\cos\theta}{(1-Y^2)} \frac{(F^2+1)^{1/2}}{F} \ldots$
139	*Eqs 4.3.23,25 read* $\ldots \frac{XY^2\sin^2\theta}{2(1-Y^2)} \sin 2\beta \ldots$	*should read* $\ldots \frac{XY^2\sin^2\theta}{4(1-Y^2)} \sin 2\beta \ldots$
141	Kunze	should read Kunz
153	*Ex 4.8 reads* ... from Eq(4.5.4)	*Ex 4.8 should read* ... from Eq(4.5.5)
157	*Eq 5.1.13 reads* $\ldots \mathrm{e}^{-i\omega t} \ldots$	*Eq 5.1.13 should read* $\ldots \mathrm{e}^{i\omega t} \ldots$
157	*Eq 5.1.14 reads* $\ldots \{\hat{\mathbf{R}} \wedge (\hat{\mathbf{R}} \ldots$	*Eq 5.1.14 should read* $\ldots \hat{\mathbf{R}} \wedge \{(\hat{\mathbf{R}} \ldots$
162	*Eq 5.2.16 reads* $\ldots \cos\theta + \beta_\parallel \ldots$	*Eq 5.2.16 should read* $\ldots \cos\theta - \beta_\parallel \ldots$
165	Fig 5.2 caption.	Add: Only the mass-shift curve is numerically to scale.
191	reciprocal of Euler's constant	exponential of Euler's constant
211	*Eq 5.6.31,2 read* $\ldots \frac{8\pi}{3\sqrt{3m^2c^3}} \ldots$	*Eq 5.6.31,2 should read* $\ldots \frac{8\pi}{3\sqrt{3}\, m^2c^3} \ldots$
220	*Eq 6.1.13 reads* $\ldots \langle i, m_i \vert \mathbf{D} \vert j, m_i \rangle \vert^2 \ldots$	*Eq 6.1.13 should read* $\ldots \langle i, m_i \vert \mathbf{D} \vert j, m_j \rangle \vert^2$
226	*Eq 6.2.13 reads* $\ldots \frac{\langle \sigma_{k,k+1} v \rangle}{\Sigma_l \langle \sigma_{k+1,ki} v \rangle}$,	*Eq 6.2.13 should read* $\ldots \frac{\langle \sigma_{k,k+1} v \rangle}{\Sigma_i \langle \sigma_{k+1,ki} v \rangle}$,
235	electric field $E(\omega)$ by Parseval's ...	electric field $E(\nu)$ by Parseval's ...
244	*Fig 6.6 Dielectronic Recombination*	*curve should be higher by a factor* $5^{1/3}$.
246	where l is the intensity	where I is the intensity
279	where $\nu_s = 2\pi\omega_s$ denotes the ...	where $\omega_s = 2\pi\nu_s$ denotes the ...
282	... by dividing by $f \langle S_i \rangle n_e d^3r$ ...	... by dividing by $\int \langle S_i \rangle n_e d^3r$ ...
288	*Eq 7.2.32 reads* $\ldots \frac{8\pi}{3\sqrt{3m^2c^3}} \ldots$	*Eq 7.2.32 should read* $\ldots \frac{8\pi}{3\sqrt{3}\, m^2c^3} \ldots$
293	*Eq 7.3.4 reads* $\ldots \mathrm{e}^{i(\omega_s t - \mathbf{k}_s.\mathbf{r}')} \ldots$	*Eq 7.3.4 should read* $\ldots \mathrm{e}^{i(\omega_s t' - \mathbf{k}_s.\mathbf{r}')} \ldots$
294	*Eq 7.3.9 reads* $\ldots \mathrm{e}^{i(\omega r' - \mathbf{k}.\mathbf{r}')} \ldots$	*Eq 7.3.9 should read* $\ldots \mathrm{e}^{i(\omega t' - \mathbf{k}.\mathbf{r}')} \ldots$
294	*Eq 7.3.10 reads* $\ldots = A\langle S_t \rangle = P_i$	*Eq 7.3.10 should read* $\ldots = A\langle S_i \rangle = P_i$
316	sources $\mathbf{j_0}$	sources $\mathbf{j}_0$
323	*Fig 8.1 caption:* ... charge exchange σ_e	*should read* ... charge exchange σ_c
326	*Eq 8.1.7 reads* $\ldots + (\sigma_p + \sigma_e) n_i$	*Eq 8.1.7 should read* $\ldots + (\sigma_p + \sigma_c) n_i$
327	$\alpha \approx n_i(\sigma_p + \sigma_e)$	$\alpha \approx n_i(\sigma_p + \sigma_c)$
327	*Eq 8.1.8* $\ldots(\sigma_p + \sigma_e)$	*Eq 8.1.8* $\ldots(\sigma_p + \sigma_c)$
348	the quantity $\frac{1}{2} m_e v^2 / 2R_y$ by	the quantity $\frac{1}{2} m_e v^2 / R_y$ by
348	divided by $2R_y m_{\mathrm{proton}}/m_e = 25$ keV.	divided by $R_y m_{\mathrm{proton}}/m_e = 25$ keV.

350	*Table 8.1 contains (B^4+ line)* 4946.0	*should contain* 494.60
355	Appendix E	Appendix 5
356	Appendix E	Appendix 5
414	Cyclotron frequency ω	Cyclotron frequency Ω
414	Bohr radius a_0 $\hbar 4\pi\epsilon_0/e^2 m_e =$	Bohr radius a_0 $\hbar^2 4\pi\epsilon_0/e^2 m_e =$
427	Dodel, G and Kunze	Dodel, G and Kunz
430	Knudsen, H. ... **23**:579	Knudsen, H. ... **23**:597
430	Laframboise ... In ... *Rarified Gas...*	Laframboise ... In ... *Rarefied Gas...*