Fundamentals of Acoustic Signal Processing Mikio Tohyama Tsunehiro Koike

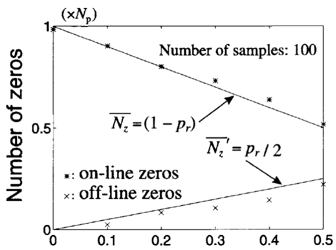
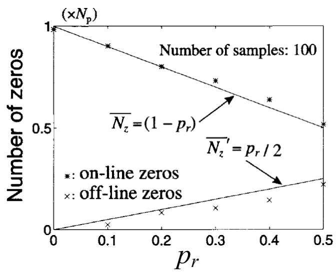
ERRATAS

1, May, 2018

page	error	correct
p.97 line 5	$\cdots = \frac{1}{2}\sum_{n=0}^{\infty} a^n e^{-j\omega n} - \frac{1}{2}\sum_{n=-\infty}^{0} a^{-n} e^{-j\omega n}$	$\cdots = \frac{1}{2}\sum_{n=0}^{\infty} a^n e^{-j\omega n} - \frac{1}{2}\sum_{n=-\infty}^{-1} a^{-n} e^{-j\omega n}$
p.100 line 4	$= \cdots = \ln(-az^{-1}) - \sum_{n=-1}^{-\infty} \frac{a^n}{n} z^{-n}$	$= \cdots = \ln(-az^{-1}) + \sum_{n=-1}^{-\infty} \frac{a^n}{n} z^{-n}$
line 5	$= \ln(-a) + \ln z^{-1} - \sum_{n=-1}^{-\infty} \frac{a^n}{n} z^{-n}$	$= \ln(-a) + \ln z^{-1} + \sum_{n=-1}^{-\infty} \frac{a^n}{n} z^{-n}$
line 12	$-\frac{a^n}{n} - \frac{\cos(n\pi)}{n} \quad n < 0$	$\frac{a^n}{n} - \frac{\cos(n\pi)}{n} \quad n < 0$
p.125 Fig5.3.2	$\cdot\cdot$, and $s_3(n) = s_1(n) \times s_2(n)$,	$\cdot\cdot$, and $s_3(n) = s_1(n) \otimes s_2(n)$,
p.144 line.1	$\cdot\cdot$ *Principals*	$\cdot\cdot$ *Principles*
p.145 line 11	$= C_v \frac{\delta\theta}{\delta p} =$	$= c_v \frac{\delta\theta}{\delta p} =$
p.146 line 22	$K = \frac{\delta p}{-\Delta} \quad (\mathrm{Nm}^{-2})$	$K = \frac{\delta p}{-\Delta} \quad (\mathrm{Nm}^{-2}).$
p.149 line 23	$c = \cdots = 280 \quad (\mathrm{ms}^{-1})$	$c = \cdots \cong 280 \quad (\mathrm{ms}^{-1})$
p.150 line 3	$= 332 \quad (\mathrm{ms}^{-1})$	$\cong 332 \quad (\mathrm{ms}^{-1})$
p.151 line 17	As stated in Section 6.1.1,	As stated in Section 6.1.2,
p.152 line 8	$z_0 = \frac{p}{v} = \rho c \quad (\mathrm{Pa\,s\,m}^{-1})$	$z_0 = \frac{p}{v} = \rho c \quad (\mathrm{Pa\,s\,m}^{-1}).$
p.155 line 2	$\mathbf{V} = -c^2\nabla(\int_0^t s dt + \mathbf{V}_0) \equiv -\nabla\phi,$	$\mathbf{V} = -c^2\nabla\int_0^t s dt + \mathbf{V}_0 \equiv -\nabla\phi,$
p.158 line 24	$-\nabla p = -\frac{\partial p}{\partial x} = \rho\frac{\partial v}{\partial t},$	$-\frac{\partial p}{\partial x} = \rho\frac{\partial v}{\partial t},$
p.159 line 7	$-\nabla p = -\frac{\partial p}{\partial x} = \rho\frac{\partial v}{\partial t} = j\omega\rho v = j\rho ckv$	$-\frac{\partial p}{\partial x} = \rho\frac{\partial v}{\partial t} = j\omega\rho v = j\rho ckv$
p.163 line 22	where $k_1 = w/c_1$ and $k_2 = w/c_2$	where $k_1 = w/c_1$ and $k_2 = w/c_2$.
p.167 line 12	$(m^3 s^{-1})$	$(\mathrm{m}^3\,\mathrm{s}^{-1})$
line 20	z_A	Z_A
p.189 line 11, 15	$N(k) =$	$N(k) \cong$
p.190 line 12, 14	$N(k) =$	$N(k) \cong$
p.191 line 3	in Section 6.4,	in Section 6.3,

page	error	correct
p.195 line 11	$\dfrac{d^2u}{dx}+k^2u=-f(x)$	$\dfrac{d^2u}{dx^2}+k^2u=-f(x)$
line 12	force (N)	for unit msaa (1/m)
p.201 line 16	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N}\cdots=\sum_{N}\sum_{p=1}^{8}\dfrac{1}{\Lambda_N V}\cdots$	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\cdots=\sum_{N}\sum_{p=1}^{8}\dfrac{1}{8V}\cdots$
p.202 line 9	$G(k,\mathbf{x},\mathbf{x}')=\cdots\sum_{N=-\infty}^{+\infty}\dfrac{1}{\Lambda_N}\cdots$	$G(k,\mathbf{x},\mathbf{x}')=\cdots\sum_{N=-\infty}^{+\infty}\dfrac{1}{8}\cdots$
p.202 line 18	$c_l=\dfrac{L_x}{\pi}\int_{-\pi/2L_x}^{\pi/2L_x}\delta(u_x-\dfrac{\pi}{L_x})e^{jl2L_xu_x}du_x=$	$c_l=\dfrac{L_x}{\pi}\int_{\pi/2L_x}^{3\pi/2L_x}\delta(u_x-\dfrac{\pi}{L_x})e^{jl2L_xu_x}du_x=$
p.203 line 5, 13	$\times\sum_{N=-\infty}^{+\infty}\dfrac{1}{\Lambda_N}\cdots$	$\times\sum_{N=-\infty}^{+\infty}\dfrac{1}{8}\cdots$
line 6, 8, 10	$\cdots\sum_{l=-\infty}^{+\infty}\dfrac{1}{\Lambda_{lmn}}$	$\cdots\sum_{l=-\infty}^{+\infty}\dfrac{1}{8}$
line 9	$\cdots\sum_{n=-\infty}^{+\infty}e^{-j2nL_zu_z}du_xdu_ydu_z$	$\cdots\sum_{n=-\infty}^{+\infty}\dfrac{L_z}{\pi}e^{-j2nL_zu_z}du_xdu_ydu_z$
p.204 line 1	$\cdots\sum_{N=-\infty}^{+\infty}\dfrac{1}{\Lambda_N}\cdots$	$\cdots\sum_{N=-\infty}^{+\infty}\dfrac{1}{8}\cdots$
line 2	$=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{1}{\Lambda_N\pi^3}\cdots$	$=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{1}{8\pi^3}\cdots$
p.205 line 9	$G(k,\mathbf{x},\mathbf{x}')=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{1}{\Lambda_N\pi^3}\cdots$	$G(k,\mathbf{x},\mathbf{x}')=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{1}{8\pi^3}\cdots$
line 11	$G(k,\mathbf{x},\mathbf{x}')=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{8}{\Lambda_N}\dfrac{e^{-jk\lvert\mathbf{R}_p+\mathbf{R}_N\rvert}}{4\pi\lvert\mathbf{R}_p+\mathbf{R}_N\rvert},$	$G(k,\mathbf{x},\mathbf{x}')=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{e^{-jk\lvert\mathbf{R}_p+\mathbf{R}_N\rvert}}{4\pi\lvert\mathbf{R}_p+\mathbf{R}_N\rvert},$
line 16	$8/\Lambda_N$	(delete)
p.208 line 20	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\dfrac{\Lambda_N}{V}\cdots=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{\Lambda_N}{V}\cdots$	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N}\cdots=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\cdots$
line 24	$=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{8}{\Lambda_N}\dfrac{1}{2\pi}\cdots$	$=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{1}{2\pi}\cdots$
p.209 line 1, 2	$=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\dfrac{8}{\Lambda_N}\cdots$	$=\sum_{p=1}^{8}\sum_{N=-\infty}^{+\infty}\cdots$
line 24	$=\dfrac{\Lambda_N}{V}\dfrac{1}{2\pi}\int_{-\infty}^{+\infty}\sum_{N}\cdots$	$=\dfrac{1}{2\pi}\int_{-\infty}^{+\infty}\sum_{N}\dfrac{\Lambda_N}{V}\cdots$
line 25	$=\dfrac{\Lambda_N}{V}\dfrac{1}{2\pi}\sum_{N}\int_{-\infty}^{+\infty}\cdots$	$=\dfrac{1}{2\pi}\sum_{N}\dfrac{\Lambda_N}{V}\int_{-\infty}^{+\infty}\cdots$
line 26	$=\dfrac{\Lambda_N}{V}\dfrac{1}{2\pi}\sum_{N}\phi_N(\mathbf{x})\phi_N(\mathbf{x}')\cdots$	$=\dfrac{1}{2\pi}\sum_{N}\dfrac{\Lambda_N}{V}\phi_N(\mathbf{x})\phi_N(\mathbf{x}')\cdots$
p.210 line 7	$\equiv c^2\cdots$	$\equiv -c^2\cdots$

page	error	correct
p.211 line 19	$\times\int_{-\infty}^{+\infty}\frac{e^{j\omega t}}{\{\cdots\}\{\cdots\}}d\omega$	$\times\int_{-\infty}^{+\infty}\frac{-e^{j\omega t}}{\{\cdots\}\{\cdots\}}d\omega$
line 20	$=-c^2\sum_N\frac{\Lambda_N}{V}\cdots$	$=c^2\sum_N\frac{\Lambda_N}{V}\cdots$
p.212 line 7	$h(t,\mathbf{x},\mathbf{x}')=-c^2\sum_N\frac{\Lambda_N}{V}\cdots$	$h(t,\mathbf{x},\mathbf{x}')=c^2\sum_N\frac{\Lambda_N}{V}\cdots$
p.213 line 4	$G(k,\mathbf{x},\mathbf{x}')=\sum_N\frac{\Lambda_N}{V}\cdots=\sum_N\frac{\Lambda_N}{V}\cdots$	$G(k,\mathbf{x},\mathbf{x}')=\sum_N\frac{8}{V}\cdots=\sum_N\frac{8}{V}\cdots$
line 5	$=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{\Lambda_N V}\cdots$	$=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{8V}\cdots$
line 9	$=\frac{V}{\Lambda_N}=\frac{L_xL_yL_z}{\Lambda_N},$	$=\frac{V}{8}=\frac{L_xL_yL_z}{8},$
line 16	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{\Lambda_N V}\cdots\equiv\cdots,$	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{8V}\cdots\equiv\cdots,$
p.216 line 2	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{\Lambda_N V}\cdots$	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{8V}\cdots$
p.218 line 23	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{\Lambda_N V}\cdots\equiv\cdots.$	$G(k,\mathbf{x},\mathbf{x}')=\sum_{N=-\infty}^{+\infty}\sum_{p=1}^{8}\frac{1}{8V}\cdots\equiv\cdots.$
p.219 line 3	⋅⋅and $\beta_0=c\delta_0$,	⋅⋅and $\beta_0=c/\delta_0$ $(\delta_0\equiv c\beta_0)$,
line 20	$\cong\lvert Y_N\rvert_{\max}^2\pi\beta\equiv\lvert Y_N\rvert_{\max}^2\pi B.$	$\cong\lvert Y_N\rvert_{\max}^2\pi\beta_0\equiv\lvert Y_N\rvert_{\max}^2\pi B.$
p.220 line 6	$\Delta N(k)=\cdots=\cdots\cong\frac{dN(k)}{dk}\pi\beta=\cdots.$	$\Delta N(k)=\cdots=\cdots\cong\frac{dN(k)}{dk}\pi\beta_0=\cdots.$
p.221 line 5	$r=\cdots.$	$r\equiv\cdots.$
p.222 line 20	$\phi_2=e^{-jkr}/r$	$\phi_2\equiv e^{-jkr}/r$
line 20	$\phi_1=\phi$	$\phi_1\equiv\phi$
line 22	$\phi_2=e^{-jkr}/r$	$\phi_2\equiv e^{-jkr}/r$
p.224 line 7	$-4\pi\phi_P+\cdots=$	$-4\pi\phi_p+\cdots=$
line 9	$\phi_P=\cdots$	$\phi_p=\cdots$
line 19	$\phi_{p1}(x,y,z)=-\frac{1}{4\pi}\iiint\cdots$	$\phi_p\equiv\phi_{p1}(x,y,z)=\frac{1}{4\pi}\iiint\cdots$
line 21	$\phi_{P2}=\cdots$	$\phi_{p2}=\cdots$
p.225 line 2	P	p
line 13	ϕ_{P2}	ϕ_{p2}

page	error	correct
p.232 line 10	**7.1.3 Distribution of Magnitude and Square Magnitude**	**7.1.3 Distribution of Square Magnitude**
p.233 line 1	$y = \sin\alpha$	$y = \sin\alpha.$
line 3	uncorrelated	independent
Fig.7.1.3	$\overline{p^2(t)} = \frac{1}{2}P_0^2(A^2+B^2),$	$\overline{p^2(t)} = \frac{1}{2}p_0^2(A^2+B^2),$
Fig.7.1.3		$p_0^2 \equiv 1$
p.236 line 8, 17	$z = e^{j\omega T}$	$z = e^{j\omega_r T}$
line 16	ωT	$\omega_r T$
line 17	$z = e^{j\omega T} = e^{j(\omega T + 2\pi)}$	$z = e^{-j\omega_r T} = e^{j(\omega_r T + 2\pi)}$
p.238 line 2	$T_R = \frac{3}{\delta_0}\log_{10} e \cong$	$T_R = \frac{3}{\delta_0 \log_{10} e} \cong$
p.242 line 3, 7, 17,23	(Wm^{-2})	$(\mathrm{Wm}^{-2}\mathrm{s}^{-1})$
p.252 Fig.7.4.6		
p.257 Fig.7.5.4	$\phi/(\pi\overline{N}_p)$	$-\phi/(\pi\overline{N}_p)$
Fig.7.5.4	$(-\phi/(\pi\overline{N}_p) = 0.1, 0.2;$ Dotted-line)	$(-\phi/(\pi\overline{N}_p) = 0.1, 0.2;$ Solid-line)
line 4	$\phi(\omega) \cong -\pi(N_p + N_z^+ - N_z^- - N_p, \text{on-line}) = \cdots$	$\phi(\omega) \cong -\pi(N_p + N_z^+ - N_z^- - N_{p,\text{on-line}}) = \cdots$
p.275 Fig.8.3.11	X	Y
Fig.8.3.11	Y	X
p.276 line 2	$X(\omega) = \frac{Z_L(\omega)H_R(\omega) - Z_R(\omega)H_L(\omega)}{H_L(\omega)G_R(\omega) - H_R(\omega)G_L(\omega)} \equiv \cdots$	$-X(\omega) = \frac{Z_L(\omega)H_R(\omega) - Z_R(\omega)H_L(\omega)}{H_L(\omega)G_R(\omega) - H_R(\omega)G_L(\omega)} \equiv \cdots$
p.309 line 27	$\cdots = \frac{\sum i}{\sigma_j}\mathbf{u}_j^{\mathrm{T}}\mathbf{u}_i = 0$	$\cdots = \frac{\sigma_i}{\sigma_j}\mathbf{u}_j^{\mathrm{T}}\mathbf{u}_i = 0$
p.317 (References) line 19	Morse, P.M. and Ingard, K.U.	Morse, P. and Ingard, K.
line 25	Schroeder, R.	Schroeder, M.

URL:

http://wavesciencestudy.com/WSS（波の科学・音の科学と技術に関する研究所）__書籍.html