《高等工程流体力学》勘误表

谨对使用本书并指出书中印刷错误的教师和研究生表示衷心的感谢！

页	行	误	正
3	倒 5	δV_0	$\delta \tau_0$
16	7	$\delta \vec{u}_R$	δu_R
17	8，10	$\frac{1}{2}a_{12},\frac{1}{2}a_{23},\frac{1}{2}a_{31}$	a_{12},a_{23},a_{31}
26	倒 1	$\vec{u}\cdot\vec{n}$	$\vec{u}\cdot\vec{n}dA$
27	1	$\vec{u}\cdot\vec{n}$	$\vec{u}\cdot\vec{n}dA$
27	4	$\vec{u}\cdot\vec{n}dA-\lim_{\varepsilon\to 0}$	$\vec{u}\cdot\vec{n}dA+\lim_{\varepsilon\to 0}$
38	倒 6，倒 10	$3\mu\mathbf{S}$	$2\mu\mathbf{S}$
50	5，6，8，14	a_0	$\vec{a}_0$
53	5	$\frac{1}{\mathrm{Re}}$	ν
53	倒 8	对x求偏导…对y求偏导	对y求偏导…对x求偏导
53	倒 7	$\left(\frac{\partial^2\Omega_x}{\partial x^2}+\frac{\partial^2\Omega_y}{\partial y^2}\right)$	$\left(\frac{\partial^2\Omega_z}{\partial x^2}+\frac{\partial^2\Omega_z}{\partial y^2}\right)$
56	5	$\partial\sigma_{ij}/\partial x_j$	$\partial\sigma_{ij}/\partial x_i$
56	倒 5	$\left[\lambda\delta_{ij}s_{jj}+2\mu s_{ij}\right]s_{ij}$	$\left[\lambda\delta_{ij}s_{kk}+2\mu s_{ij}\right]s_{ij}$
58	8	$W=-\int_{A_0+A}\vec{u}\cdot\vec{p}_n dA$	$W=\int_{A_0+A}\vec{u}\cdot\vec{p}_n dA$
58	8	$\int_{A_0+A}\vec{u}\cdot(\vec{n}\cdot\mathbf{\Sigma})dA$	$\int_{A_0+A}\vec{u}\cdot(-\vec{n}\cdot\mathbf{\Sigma})dA$
58	8	$\int_{A_0+A}\vec{u}\cdot(\vec{n}\cdot\mathbf{\Sigma})dA$	$\int_{A_0+A}-\vec{u}\cdot(\vec{n}\cdot\mathbf{\Sigma})dA$
59	8	$\frac{\partial p}{\partial t}$	$\frac{\partial \rho}{\partial t}$
59	倒 7	(2.2a)	(2.2b)
63	倒 7，倒 11	p_a	p_0
64	倒 7	$F(\vec{r},0)=0$	$F(\vec{r},t)=0$

67	15	$+\frac{a^3}{r^3}$	$+\frac{1}{2}\frac{a^3}{r^3}$
68	1	$\rho\frac{\partial u_j}{\partial t}$	$\frac{\partial\left(\rho u_j\right)}{\partial t}$
82	7	ds	dA
84	倒 7，8，10	$\vec{\Omega}_\theta$	$\vec{\Omega}$
97	倒 13	$n>1/2$	$n\geq 1/2$
107	倒 6	$-\left(uvydx-uvxdy\right)\right]$	$-\left(uvydx+uvxdy\right)\right]$
109	倒 10	$2\pi\rho U_\infty \operatorname{Re}\left[\cdots\right]$	$-2\pi\rho U_\infty \operatorname{Re}\left[\cdots\right]$
109	7	$\pm\Gamma$	$\Gamma=\pm\left\|\Gamma\right\|$
109	9	$\left\|\Gamma\right\|>0\cdots\left\|\Gamma\right\|<0$	$\Gamma>\cdots\Gamma<0$
111	11	$\frac{m}{2\pi}\sum_{n=-\infty}^{\infty}\frac{1}{z-ind}$	$\sum_{n=-\infty}^{\infty}\frac{a^2U}{z-ind}$
111	12	在行首增添“上式中 a 是圆柱半径。”	
116	倒 2	在 z_0 的邻域内	在 ζ_0 的邻域内
131	3	$F\left(\zeta\right)=\left[\cdots\right]$	$F\left(\zeta\right)=U\left[\cdots\right]$
138	倒 7	$-3xy$	$-3xy^2$
139	16	成正比	成反比
139	12	$\frac{\Gamma}{2\pi i}\ln\frac{z}{a}$	$-\frac{\Gamma}{2\pi i}\ln\frac{z}{a}$
139	倒 2	电源	点源
140	题 4.13 图	$-z_0$	$\overline{z_0}$
145	11	$r^2\frac{\partial\psi}{\partial r^2}$	$r^2\frac{\partial^2\psi}{\partial r^2}$
145	11	在行尾增补“（5.6）”	
146	3	删去行尾“（5.6）”	
146	12	$\frac{1}{T\sin\theta}$	$-\frac{1}{T\sin\theta}$
156	6	$-\frac{1}{2}Ur^2\sin^2\theta$	$\frac{1}{2}Ur^2\sin^2\theta$

156	10	$-\frac{1}{2}UR^2$	$\frac{1}{2}UR^2$
156	倒 6	$-\frac{1}{2}UR_m{}^2$	$\frac{1}{2}UR_m{}^2$
157	4	$-\frac{1}{2}UR_m{}^2$	$\frac{1}{2}UR_m{}^2$
169	题 5.9 图	$Q(x)$	$Q(t)$
170`	3	$=\frac{1}{2}C_D\rho V^2A$	$=\frac{1}{2}C_D\rho U^2A$
177	8	Γ_n	Γ_m
190	到 1	$\frac{(2n-1)\Gamma}{4\pi a^2}$	$\frac{(2n-1)\Gamma}{4\pi a}$
193	倒 9	$u=u(y,z)$	$u=u(y,z,t)$
193	倒 3	$p=p(x)$	$p=p(x,t)$
193	倒 1	$u\frac{\partial}{\partial x}u(y,z)$	$u\frac{\partial}{\partial x}u(y,z,t)$
203	1	$erf(\eta)\left(\frac{y}{2\sqrt{\nu t}}\right)$	$erf\left(\frac{y}{2\sqrt{\nu t}}\right)$
209	8	$\frac{\rho}{\left(R_0^2-R_i^2\right)}$	$\frac{\rho}{\left(R_0^2-R_i^2\right)^2}$
211	2	$t=0$	$t\to 0$
223	6	椭圆长	椭圆半长
224	1	$U=\cos(nt)$	$u=U\cos(nt)$
227	6	Re 很小	St 不太大
227	倒 5	$\vec{\Omega}=\vec{k}\nabla^2\psi$	$\vec{\Omega}=-\vec{k}\nabla^2\psi$
229	6	$\frac{\sin\theta}{r^2}\frac{\partial}{\partial\theta}\left(\frac{1}{\sin\theta}\frac{\partial\psi}{\partial\theta}\right)$	$\frac{\sin\theta}{r^2}\frac{\partial}{\partial\theta}\left(\frac{1}{\sin\theta}\frac{\partial}{\partial\theta}\right)$
232	12	$\sigma_{rr}=-p+\tau_{r\omega}$	$\sigma_{rr}=-p+\tau_{rr}$
232	12	$\frac{3\mu U}{2a}\cos$	$\frac{3\mu U}{2a}\cos\theta$
232	12	$\sigma_{r\theta}=\tau_{r\omega}$	$\sigma_{r\theta}=\tau_{r\theta}$
233	2	$\mathrm{Re}=ZU_a/\nu$	$\mathrm{Re}=2Ua/\nu$

237	2	$U\frac{\partial \vec{u}}{\partial z}$	$U\frac{\partial \vec{u}}{\partial x}$
238	6	$\frac{\partial^2 v}{\partial y^2}=0$	$\frac{\partial p}{\partial y}=0$
240	13	$\mu\left[\frac{1}{\mu}\frac{dp}{dx}$	$\mu\left[\frac{1}{2\mu}\frac{dp}{dx}$
241	倒 8	不是z的函数	不是z_0的函数
242	14	$\left(p-\rho gz\right)$	$\left(p+\rho gz\right)$
243	1	$\vec{u}=K\nabla\phi$	$\vec{u}=-K\nabla\phi$
243	10	近可表示为	近水头降落可表示为
243	10	$s(R)=\phi_R-\phi(R)$	$s(R)=\phi_0-\phi(R)$
244	7	90 s	100 s
244	倒 16	x	z
269	5	$\frac{dU}{dx}\int_0^\delta U dy$	$\frac{dU}{dx}\int_0^\delta u dy$
272	倒 1	$\frac{\partial^2 u}{\partial y^n}$	$\frac{\partial^n u}{\partial y^n}$
273	4	$\frac{\partial^2 u(0,\delta)}{\partial y^2}=0$	$\frac{\partial^2 u(x,\delta)}{\partial y^2}=0$
279	1	$1.193\rho U^2\sqrt{\frac{\nu}{c}}$	$1.193\rho U^2\frac{1}{x}\sqrt{\frac{\nu}{c}}$
279	11，17	$\partial p/\partial y$	$\partial p/\partial x$
280	10	$\frac{1}{\mu}\frac{\partial p}{\partial y}$	$\frac{1}{\mu}\frac{\partial p}{\partial x}$
280	14，倒 6	$\partial p/\partial y$	$\partial p/\partial x$
281	1	$\partial p/\partial y$	$\partial p/\partial x$
286	3	$\delta>\delta^*+\theta$	$\delta>\left(\delta^*+\theta\right)$
286	13	$+uv\frac{\partial}{\partial\psi}$	$+\nu(希)u\frac{\partial}{\partial\psi}$

288	图 9.10	R	R_0
294	18	$\tau'_{xz}=-\rho u'w'$	$\tau'_{xz}=-\rho\overline{u'w'}$
295	2	$-\dfrac{1}{\rho}\dfrac{\partial\sigma_{ij}}{\partial x_i}$	$\dfrac{1}{\rho}\dfrac{\partial\sigma_{ij}}{\partial x_j}$
297	12	$\dfrac{\overline{u'_z u'_R}}{R}$	$\rho\dfrac{\overline{u'_z u'_R}}{R}$
304		图 10.6	去掉图中虚线和 λ_r 及相关标注线
304	倒 14	$-3/5$	$-5/3$
304	倒 5	R_{ji}	R_{jl}
307	8	$\eta\nu^2$(希)$E_0(\eta k)$	$\eta\nu^2$(英)$E_0(\eta k)$
310	12，15，16	$\lvert\overline{u'}\rvert$, $\lvert\overline{v'}\rvert$	$\overline{\lvert u'\rvert}$, $\overline{\lvert v'\rvert}$
313	倒 13	$2\nu\overline{\dfrac{\partial u'_i}{\partial x_j}\dfrac{\partial u'_l}{\partial x_j}\dfrac{\partial u'_i}{\partial x_l}}$	$2\nu\overline{\dfrac{\partial u'_i}{\partial x_j}\dfrac{\partial u'_i}{\partial x_l}\dfrac{\partial u'_j}{\partial x_l}}$
316	倒 6	$\overline{u'_i u'_k}\dfrac{\partial\overline{u'_j}}{\partial x_k}+\overline{u'_j u'_k}\dfrac{\partial\overline{u'_i}}{\partial x_k}$	$\overline{u'_i u'_k}\dfrac{\partial\overline{u}_j}{\partial x_k}+\overline{u'_j u'_k}\dfrac{\partial\overline{u}_i}{\partial x_k}$
316	倒 6	$\overline{u'_i u'_k}\dfrac{\partial\overline{u'_i}}{\partial x_k}$	$\overline{u'_i u'_k}\dfrac{\partial\overline{u}_i}{\partial x_k}$
320～324		$\overline{u^+}$	u^+
323	4，12	$u_*=\tau_w/\rho$	$u_*=\sqrt{\tau_w/\rho}$
324	2	$u_*=\tau_w/\rho$	$u_*=\sqrt{\tau_w/\rho}$
325	4	特征长度	特征速度
332	9	$c\left(y/b\right)^{1/7}$	$c\left(y/b\right)^{1/n}$
	6	$u^+=\dfrac{1}{k}\ln y^+ + B$	$y^+=u^+ + e^{-kB}\left[e^{-ku^+}-1-ku^+ -\left(ku^+\right)^2/2-\left(ku^+\right)^3/6\right]$
332	7	$\mu_t=k\mu e^{-kB}\left[e^{-kB}-1-\cdots\right.$	$\mu_t=k\mu e^{-kB}\left[e^{-ku^+}-1-\cdots\right.$
332	倒 10	$c_f=C\,\mathrm{Re}_s^{-m}$	$c_f=C\,\mathrm{Re}_\delta^{-m}$

332	倒 4	$\delta_{turb}/\delta_{lam}=0.074x\,\mathrm{Re}_x^{3/10}$	$\delta_{turb}/\delta_{lam}=0.074\,\mathrm{Re}_x^{3/10}$
342	倒 2	特征性	特征线
349	2	(11.8c)	(11.18c)
354	倒 10	$M=u_1/a_1$	$M_1=u_1/a_1$
370	7	$1-\dfrac{\gamma-1}{2\gamma}\dfrac{p_\infty}{\rho_\infty}(\vec{u}\cdot\vec{u}-U^2)$	$1-\dfrac{\gamma-1}{2\gamma}\dfrac{\rho_\infty}{p_\infty}(\vec{u}\cdot\vec{u}-U^2)$
377	倒 11	$\dfrac{\partial^2\Phi'}{\partial x^2}+\dfrac{\partial^2\Phi}{\partial\eta^2}=0$	$\dfrac{\partial^2\Phi'}{\partial x^2}+\dfrac{\partial^2\Phi'}{\partial\eta^2}=0$
380	倒 11	半厚函数	半厚度函数
381	倒 12	厚度函数 $\gamma(x)=0$	弯度 $h=0$
389	倒 11	在点膨胀波	在 B 点膨胀波
390	3	$\rho v=\rho_0=\dfrac{\partial\psi}{\partial x}$	$\rho v=-\rho_0\dfrac{\partial\psi}{\partial x}$
390	倒 1	马赫数	超音速气流马赫数
391	9	并与上题	并与 12. 7 题
414	倒 5	$\begin{pmatrix}0 & e^{-2t} & -\frac{3}{2}e^{-3t}\\ e^{-2t} & 0 & 0\\ -\frac{3}{2}e^{-3t} & 0 & 0\end{pmatrix}$	$\begin{pmatrix}0 & -e^{-2t} & -\frac{3}{2}e^{-3t}\\ -e^{-2t} & 0 & 0\\ -\frac{3}{2}e^{-3t} & 0 & 0\end{pmatrix}$
418	3	$\left(x^2+y^2\right)\left[\left(x^2+y^2\right)^2+4\right]$	$\left(x^2+y^2\right)^4+4\left(x^2-y^2\right)^2-16x^2y^2$
418	9	0.0265	0.0186
418	倒 4	$\dfrac{U(\pi-\alpha)}{\pi a}$	$\dfrac{U\pi a}{\pi-\alpha}$
419	1	$\dfrac{\mu\sin^2\theta_1}{r_1}-\left(\mu\dfrac{a^3}{l^3}\right)\dfrac{\mu\sin^2\theta_2}{r_2}$	$\dfrac{\mu\sin^2\theta_1}{4\pi r_1}-\left(\dfrac{\mu}{4\pi}\dfrac{a^3}{l^3}\right)\dfrac{\mu\sin^2\theta_2}{r_2}$
419	2	$\dfrac{\rho\dot{Q}}{2\pi}\dfrac{1}{y^2+z^2+h^2}$	$\dfrac{\rho\dot{Q}}{2\pi}\dfrac{1}{\left(y^2+z^2+h^2\right)^{1/2}}$
419	倒 5	$\left[\dfrac{y+a}{\sqrt{x^2+(a+y)^2}}-\dfrac{a-y}{\sqrt{x^2+(a+y)^2}}\right]$	$\left[\dfrac{y+a}{\sqrt{x^2+(a+y)^2}}+\dfrac{a-y}{\sqrt{x^2+(a-y)^2}}\right]$
419	倒 2	$\ln\dfrac{x^2+(y+h)^2}{x^2+(y-h)^2}+\dfrac{y}{h}=c$	$\ln\dfrac{x^2+(y+h)^2}{x^2+(y-h)^2}-\dfrac{y}{h}=c$

420 3	$u_2=\cdots,\ u_1=\cdots$	$u_1=\cdots,\ u_2=\cdots$
420 6	$u=U\left(R-a\right)/h$	$u=U\left(R-b\right)/h$
420 倒 7	$u(y,t)=\cdots\sin\dfrac{n\pi y}{h}e^{-\frac{n\pi x}{b}}$	$u(y,z)=\cdots\sin\dfrac{n\pi y}{b}e^{-\frac{n\pi z}{b}}$
421 7	$6\pi\mu aU\dfrac{2\mu+3\mu_0}{\mu+\mu_0}$	$6\pi\mu aU\dfrac{1+2\mu/\left(3\mu_0\right)}{1+\mu/\mu_0}$
	$\dfrac{2}{3}\dfrac{a^2g}{\mu}\left(\rho-\rho_0\right)\dfrac{\mu+\mu_0}{2\mu+3\mu_0}$	$\dfrac{2}{9}\dfrac{a^2g}{\mu}\left(\rho-\rho_0\right)\dfrac{1+\mu/\mu_0}{1+2\mu/\left(3\mu_0\right)}$
421 11	$u_R=\dfrac{\rho gk}{\mu R}\cdots;\ \dfrac{2\pi\rho gkh}{\mu}\cdots$	$u_R=\dfrac{k}{\mu R}\cdots;\ \dfrac{2\pi kh}{\mu}\cdots$
421 倒 5	$u=\dfrac{\partial\psi}{\partial y}=6\alpha^2\nu x^{1/3}f'$	$u=\dfrac{\partial\psi}{\partial y}=6\alpha^2\nu x^{-1/3}f'$
	$6\alpha^2\nu x^{1/3}B\left[1-\tanh\left(\alpha B\dfrac{y}{x^{2/3}}\right)\right]$	$6\alpha^2\nu x^{-1/3}B^2\left[1-\tanh^2\left(\alpha B\dfrac{y}{x^{2/3}}\right)\right]$
421 倒 4	$v_w=cx^{-1/2}$	势流速度 $U\sim x^m$, 吸气速度 $v_w\sim x^{(m-1)/2}$
422 1～3	$\dfrac{d}{dx}(U^2\theta)+\cdots=\dfrac{\tau_0}{\rho}-g\delta$；	$\dfrac{d}{dx}(U^2\theta)+\cdots=\dfrac{\tau_0}{\rho}$
	$\dfrac{\delta}{x}=1.5492\cdots,\ \dfrac{\delta^*}{x}=0.5164\cdots,$	$\dfrac{\delta}{x}=2.449\cdots,\ \dfrac{\delta^*}{x}=0.8165\cdots$
	$\dfrac{\theta}{x}=0.2066\cdots,\ \ \tau_0=2.582\cdots$	$\dfrac{\theta}{x}=0.3265\cdots,\ \ \dfrac{\tau_0}{\rho U^2}=0.8165\cdots$
422 4	$\dfrac{\delta}{x}=4.4967\cdots$	$\dfrac{\delta}{x}=4.387\cdots$
	$\dfrac{\tau_0}{\rho U^2/2}=1.1392\cdots$	$\dfrac{\tau_0}{\rho U^2}=0.578\cdots$
422 9	$\delta=2.68\sqrt{\dfrac{\nu}{U}}x^{1/3}$	$\delta=2.86\sqrt{\dfrac{\nu}{U}}x^{1/3}$
422 11	$U=cx^{-0.0854}$	$U=cx^{-0.0875}$

423	5	$\frac{p}{p_0}=\frac{2\gamma U/a_{01}}{\left(1+a_{01}/a_{02}\right)}+1$	$\frac{p}{p_0}=\frac{2\gamma U/a_{01}}{\left(1+a_{02}/a_{01}\right)}+1$
423	倒 4	1.633；139.8×10^3 Pa	1.769；114×10^3 Pa
425	倒 1	1995	2005