Corrections to Complex Analysis by Stein and Shakarchi

林晓烁

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◇ **Page 13, third line from the bottom** 原文 where $\psi(h) = \psi_1(h) + \psi_2(h) \to 0$ 更正 where $\psi(h) = \psi_1(h) + \mathrm{i}\psi_2(h) \to 0$

◇ **Page 63, second displayed equation** 原文 $\displaystyle\sum_{n=1}^{\infty} -\frac{z^n}{z_1^{n+1}}$ 更正 $\displaystyle\sum_{n=0}^{\infty} -\frac{z^n}{z_1^{n+1}}$

◇ **Page 66, Exercise 9** 原文 bounded open subset 更正 bounded connected open subset

◇ **Page 67, Exercise 12 (b)** 原文 $u(z) = \dfrac{1}{2\pi}\displaystyle\int_0^{2\pi} P_r(\theta - \varphi)u(\varphi)\,\mathrm{d}\varphi$

更正 $u(z) = \dfrac{1}{2\pi}\displaystyle\int_0^{2\pi} P_r(\theta - \varphi)u\big(e^{\mathrm{i}\varphi}\big)\,\mathrm{d}\varphi$

◇ **Page 69, Problem 4** 原文 if not connected 更正 is not connected

◇ **Page 69, Problem 5** 原文 $\lim\limits_{n\to\infty} F(z + N_k) = h(z)$ 更正 $\lim\limits_{k\to\infty} F(z + N_k) = h(z)$

◇ **Page 108, Problem 1** 原文 $1/n \notin f(\mathbb{D})$ 更正 $1/n \notin f_n(\mathbb{D})$

◇ **Page 124, first displayed equation** 原文 $\left|\widehat{f_\varepsilon}(\xi) - \hat{f}(\xi)\right| \leqslant \displaystyle\int_{-\infty}^{\infty} |f(x)|\left[\frac{1}{(1 + \mathrm{i}\varepsilon x)^2} - 1\right]\mathrm{d}x$

更正 $\left|\widehat{f_\varepsilon}(\xi) - \hat{f}(\xi)\right| \leqslant \displaystyle\int_{-\infty}^{\infty} |f(x)|\left|\frac{1}{(1 + \mathrm{i}\varepsilon x)^2} - 1\right|\mathrm{d}x$

◇ **Page 127, Exercise 2** 原文 whenever $0 \leqslant b < a$. 更正 whenever $0 < b < a$.

◇ **Page 128, Exercise 5 (a)** 原文 the roots of R 更正 the roots of Q

◇ **Page 131, Exercise 12 (b)** 原文 let $\beta \to \pi$ 更正 let $\beta \to 1$

◇ **Page 131, Problem 1** 原文 $|f(z)| \leqslant Ae^{a|z|^q}$ 更正 $|f(z)| \leqslant Ae^{B|z|^q}$

◇ **Page 154, Exercise 4 (a)** 原文 hence F is of order 2 更正 hence F has an order of growth $\leqslant 2$

◇ **Page 155, Exercise 7 (a)** One should add the condition $a_n \neq -1$.

◇ **Page 156, Exercise 16** One should add the condition that $\{a_n\}$ are distinct points.

◇ **Page 156, Exercise 16** 原文 f has a prescribed poles and principal parts 更正 f has prescribed poles and principal parts

◇ **Page 167, fourth displayed equation** 原文 $$\sum_{n=1}^{\infty}\frac{1}{n}-\log N=\sum_{n=1}^{N-1}a_n+\frac{1}{N}$$

更正 $$\sum_{n=1}^{N}\frac{1}{n}-\log N=\sum_{n=1}^{N-1}a_n+\frac{1}{N}$$

◇ **Page 177, Exercise 11** 原文 in the strip $\{x+\mathrm{i}y:|y|<\pi\}$ 更正 in the strip $\left\{x+\mathrm{i}y:|y|<\frac{\pi}{2}\right\}$

◇ **Page 177, Exercise 11** 原文 $\hat{f}(\xi)=\Gamma(a+\mathrm{i}\xi)$ 更正 $\hat{f}(\xi)=\Gamma(a-2\pi\mathrm{i}\xi)$

◇ **Page 179, Exercise 17 (b)** 原文 Prove that $I(0)=0$ 更正 Prove that $I(0)=f(0)$

◇ **Page 179, Exercise 17 (b)** 原文 $I(-n)=(-1)^n f^{(n+1)}(0)$ 更正 $I(-n)=(-1)^n f^{(n)}(0)$

◇ **Page 179, Problem 1 (a)** 原文 $$\zeta(s)=\sum_{1\leqslant n<N}n^{-s}-\frac{N^{s-1}}{s-1}+\sum_{n\geqslant N}\delta_n(s)$$

更正 $$\zeta(s)=\sum_{1\leqslant n<N}n^{-s}-\frac{N^{1-s}}{1-s}+\sum_{n\geqslant N}\delta_n(s)$$

◇ **Page 180, Problem 3** 原文 $$\zeta(s)=\frac{s}{s-1}-\frac{1}{2}+s\int_1^{\infty}\frac{\{x\}}{x^{s+1}}\,\mathrm{d}x$$

更正 $$\zeta(s)=\frac{s}{s-1}-\frac{1}{2}-s\int_1^{\infty}\frac{Q(x)}{x^{s+1}}\,\mathrm{d}x$$

◇ **Page 180, Problem 3** 原文 $$\zeta(s)=\frac{s}{s-1}-\frac{1}{2}+(-1)^k s\int_1^{\infty}\left(\frac{\mathrm{d}^k}{\mathrm{d}x^k}Q_k(x)\right)x^{-s-1}\,\mathrm{d}x$$

更正 $$\zeta(s)=\frac{s}{s-1}-\frac{1}{2}-s\int_1^{\infty}\left(\frac{\mathrm{d}^k}{\mathrm{d}x^k}Q_k(x)\right)x^{-s-1}\,\mathrm{d}x$$

◇ **Page 201, Exercise 4** 原文 $$Q(x)=\sum_{m=0}^{q-1}a_m e^{mx}$$ 更正 $$Q(x)=\sum_{m=0}^{q-1}a_{q-m}e^{mx}$$

◇ **Page 204, Problem 2** 原文 $$\psi_1(x)=\frac{x^2}{2}-\sum_{\rho}\frac{x^{\rho}}{\rho(\rho+1)}-E(x)$$

更正 $$\psi_1(x)=\frac{x^2}{2}-\sum_{\rho}\frac{x^{\rho+1}}{\rho(\rho+1)}-E(x)$$

◇ **Page 204, Problem 2** 原文 $c_0=\zeta'(-1)/\zeta(-1)$. 更正 $c_0=-\zeta'(-1)/\zeta(-1)$.

◇ **Page 212, Example 7** Replace the second paragraph, except for its first sentence, with the following: "If x travels from 0 to 1, then $f(x)$ goes from $-\infty$ to -1 on the real axis. If $z=e^{\mathrm{i}\theta}$, then $f(z)=-\cos\theta$ and as x travels from 1 to -1 along the unit half-circle in the upper half-plane, the $f(x)$ goes from -1 to 1 on the real segment. Finally, when x goes from -1 to 0, $f(x)$ goes from 1 to ∞ along the real axis."

◇ **Page 212, Example 8** Replace the first sentence by "The map $f(z)=\sin z$ takes the half-strip $\left\{w=x+\mathrm{i}y:-\frac{\pi}{2}<x<\frac{\pi}{2},\,y>0\right\}$ conformally onto the upper half-plane."

◇ **Page 252, Exercise 18** 原文 a piecewise-smooth closed curve 更正 a piecewise-smooth simple closed curve

◇ **Page 309, Exercise 1** 原文 the first two derivatives 更正 the first three derivatives

◇ **Page 311, Exercise 5** 原文 Use also $mx^{m-1}(1-x) < 1-x^m < m(1-x)$ 更正 Use also $mx^{m-1}(1-x) \leqslant 1-x^m \leqslant m(1-x)$

◇ **Page 313, Exercise 12** 原文 the sum of the divisors of d 更正 the sum of the divisors of n

◇ **Page 314, Problem 2** 原文 $|\mathrm{Im}(\tau)| \geqslant 0$ 更正 $\mathrm{Im}(\tau) \geqslant 0$

◇ **Page 314, Problem 2** 原文 w 更正 τ'