Corrections to Complex Analysis by Stein and Shakarchi

林晓烁

Last updated: 2025-03-14

ISBN: 978-0-691-1138-2 (Princeton University Press), 978-7-5100-4054-2 (世界图书出版公司).

- **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 $\sum_{n=1}^{\infty} -\frac{z^n}{z_1^{n+1}}$ 更正 $\sum_{n=0}^{\infty} -\frac{z^n}{z_1^{n+1}}$
- **Page 66, Exercise 9** 原文 bounded open subset 更正 bounded connected open subset
- **Page 67, Exercise 12** 原文 (b) $u(z)=\frac{1}{2\pi}\int_0^{2\pi} P_r(\theta-\varphi)u(\varphi)\,\mathrm{d}\varphi$ 更正 (b) $u(z)=\frac{1}{2\pi}\int_0^{2\pi} P_r(\theta-\varphi)u(e^{\mathrm{i}\varphi})\,\mathrm{d}\varphi$
- **Page 69, Problem 4** 原文 if not connected 更正 is not connected
- **Page 69, Problem 5** 原文 $\lim_{n\to\infty} F(z+N_k)=h(z)$ 更正 $\lim_{k\to\infty} F(z+N_k)=h(z)$
- **Page 108, Problem 1** 原文 $1/n\notin f(\mathbb{D})$ 更正 $1/n\notin f_n(\mathbb{D})$
- **Page 128, Exercise 5** 原文 the roots of R 更正 the roots of Q
- **Page 131, Exercise 12** 原文 (b) let $\beta\to\pi$ 更正 (b) let $\beta\to 1$
- **Page 155, Exercise 7** (a) One should add the condition $a_n\neq -1$.
- **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 $\{x+\mathrm{i}y: |y|<\frac{\pi}{2}\}$
- **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** 原文 (b) Prove that $I(0)=0$ 更正 (b) Prove that $I(0)=f(0)$

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

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

◇ **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 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'