Errata Sheet for 2nd Edition

p. 12, 11 & 13 dn: Change $\mathcal{U}(\psi;\mathcal{C})$ to $\mathcal{U}(\varphi|\psi;\mathcal{C})$ and $\mathcal{L}(\psi;\mathcal{C})$ to $\mathcal{L}(\varphi|\psi;\mathcal{C})$.

p. 39, 4up: Change "$\Gamma_n \nearrow \Gamma$" to "$\Gamma_n \nearrow \Gamma$ or $\Gamma_n \searrow \Gamma$"

p. 50, proof of Theorem 2.2.11: Change to:

Proof. The existence of $\lambda_{\mathbb{R}^N}$ as well as it regularity are immediate consequences of Theorem 2.2.8. To prove the uniqueness assertion, suppose that ν is a Borel measure on $\mathbb{R}^N$ for which $\nu(Q) = \mathrm{vol}(Q)$ for all cubes Q. Given a cube Q, one can find cubes such that $Q_n \nearrow \mathring{Q}$ and $\mathrm{vol}(Q_n) \nearrow \mathrm{vol}(Q)$, which means that

$$\nu(Q) = \mathrm{vol}(Q) = \lim_{n\to\infty} \mathrm{vol}(Q_n) = \lim_{n\to\infty} \nu(Q_n) \le \nu(\mathring{Q}).$$

Hence, $\nu(\partial Q) = 0$ for all cubes Q. Now let G be an open set, and choose $\{Q_n : n \ge 1\}$ to be a non-overlapping, exact cover of G by cubes. Then, because $Q_m \cap Q_n \subseteq \partial Q_m \cup \partial Q_n$ and therefore $\nu(Q_m \cap Q_n) = 0$ for $m \ne n$,

$$\nu(G) = \sum_{n=1}^{\infty} \nu(Q_n) = \lambda_{\mathbb{R}^N}(G),$$

and so $\nu = \lambda_{\mathbb{R}^N}$ on $\mathfrak{G}(\mathbb{R}^N)$. By the argument at the end of the proof of Theorem 2.2.8, this proves that $\nu = \lambda_{\mathbb{R}^N}$ on $\mathcal{B}_{\mathbb{R}^N}$. □

p. 109, 12up: Change to
(a) $\mathbf{1} \in \mathcal{L}$ and $\alpha f + \beta g \in \mathcal{L}$ if $f,\, g \in \mathcal{L}$ and $\alpha,\, \beta \in [0,\infty)$.

p. 110, 10 & 11dn: Change "bounded" to "non-negative"

p. 144, 1 & 2up: Replace $(1-t)^{n-1}$ by $\left(1-\frac{t}{n}\right)^{n-1}$ in the integrands.

p. 150, 9up: Change $\tilde{U} \times (-\rho,\rho)$ to $\tilde{U} = U \times (-\rho,\rho)$.

p. 151, 2dn: Delete

$$\Big(\mathbf{n}\big(\Psi(u)\big), \Psi\big(u(t)\big) - \Psi(u)\Big)_{\mathbb{R}^N}$$

from this line.

p. 154, 3dn: Change $-i|\dot{f}\dot{z}$ to $-i|\dot{\gamma}|^{-1} f\dot{z}$.

p. 160, 9-10dn: Replace these lines by:
Depending on whether f is non-increasing or non-decreasing, it is bounded above on $[c-n,\infty)$ or $(-\infty, c+n]$, and so, in either case, the preceding implies that $f \circ \varphi_n \in L^1(\mu;\mathbb{R})$ and

$$\int f \circ \varphi_n \, d\mu \ge f\left(\int \varphi_n \, d\mu\right).$$

In addition, $f \circ \varphi_n \le f \circ \varphi_{n+1} \le f \circ \varphi$, and therefore $(f \circ \varphi)^- \le (f \circ \varphi_0)^- \in L^1(\mu;\mathbb{R})$ and

$$\int f \circ \varphi \, d\mu \ge \lim_{n\to\infty} \int f \circ \varphi_n \, d\mu \ge \lim_{n\to\infty} f\left(\int f \circ \varphi_n \, d\mu\right) = f\left(\int \varphi \, d\mu\right).$$

p. 221, 2up & p. 222 1dn: Replace μ_n by $4\mu_n$.

p. 222, 10up: Replace $\mu_n^{\frac{j+\ell}{2}}$ by $\mu_n^{\frac{j+\ell+1}{2}}$

p. 244, proof of Theorem 8.1.3: Change the last paragraph of the proof to

To prove the $|\mu|$-a.e. uniqueness of A, suppose that $\mu(\Gamma) = |\mu|(\Gamma \cap B) - |\mu|(\Gamma \cap B^{\complement})$ for all Γ, and conclude that $|\mu|(\Gamma \cap B) = |\mu|(\Gamma \cap A)$ for all Γ and therefore that $\mathbf{1}_A = \mathbf{1}_B$ $|\mu|$-a.e.

p. 247, 15up: Change "measure space" to "finite measure space"