Errata for

"An Introduction to Operators on the Hardy–Hilbert Space",

by Rubén A. Martínez-Avendaño and Peter Rosenthal.
Graduate Texts in Mathematics 237, Springer 2006.

Last update: May 17, 2007.

Thanks to Dvir Kleper.

- Page 46, line 5. Statement of Corollary 2.2.6.

  It reads: $\mathcal{M}_E = \{f \in \boldsymbol{H}^2 : f(e^{i\theta}) = 0 \text{ a.e. on } E\}$.

  It should read: $\mathcal{M}_E = \{f \in \boldsymbol{L}^2 : f(e^{i\theta}) = 0 \text{ a.e. on } E\}$.

- Page 46, line 8. In the proof of Corollary 2.2.6.

  It reads: $\mathcal{M}_E = \{f \in \boldsymbol{H}^2 : f(e^{i\theta}) = 0 \text{ a.e. on } E\}$.

  It should read: $\mathcal{M}_E = \{f \in \boldsymbol{L}^2 : f(e^{i\theta}) = 0 \text{ a.e. on } E\}$.

- Page 54, line -8. In the proof of Example 2.4.5.

  It reads: $|\phi(0)| < \prod_{j=k}^{n} |z_k|$.

  It should read: $|\phi(0)| < \prod_{k=1}^{n} |z_k|$.

- Page 72, line -9. In the proof of Theorem 2.6.7.

  It reads: $\mu_1(E) \leq \mu_2(E)$.

  It should read: $\mu_1(E) \geq \mu_2(E)$

- Page 75, line -3. In the proof of Theorem 2.6.8.

  It reads: $B_n\boldsymbol{H}^2$.

  It should read: $B_m\boldsymbol{H}^2$.

- Page 77, line -1. In the proof of Corollary 2.6.11.

  It reads: all the inner parts of all the functions in $\boldsymbol{H}^2$.

  It should read: all the inner parts of all the functions in $\phi\boldsymbol{H}^2$.

- Page 81, line 6. In the proof of Lemma 2.7.1.

  It reads: such that $\{g(r_n e^{i\theta})\} \to g(e^{i\theta})$ a.e.

  It should read: such that $\{g(r_n e^{i\theta})\} \to \widetilde{g}(e^{i\theta})$ a.e.

- Page 84, lines 8 through 15. The statement and proof of Corollary 2.7.5 have many θ's where there should be t's. Also, the last F should be $\widetilde{F}$. The correct statement and proof should be:

Corollary 2.7.5. *If f is in $\boldsymbol{H}^2$, f is not identically 0, and F is defined by*

$$F(z) = \exp\left(\frac{1}{2\pi}\int_0^{2\pi} \frac{e^{i\theta}+z}{e^{i\theta}-z} \log|\widetilde{f}(e^{i\theta})|\, d\theta\right),$$

then $|\widetilde{F}(e^{it})| = |\widetilde{f}(e^{it})|$ a.e.

Proof. Since F is in $\boldsymbol{H}^2$,

$$|\widetilde{F}(e^{it})| = \lim_{r\to 1^-} |F(re^{it})| = \exp\left(\lim_{r\to 1^-} \frac{1}{2\pi}\int_0^{2\pi} P_r(\theta - t)\log|\widetilde{f}(e^{i\theta})|\, d\theta\right).$$

By the corollary to Fatou's theorem (Corollary 1.1.27),

$$\exp\left(\lim_{r\to 1^-} \frac{1}{2\pi}\int_0^{2\pi} P_r(\theta - t)\log|\widetilde{f}(e^{i\theta})|\, d\theta\right) = \exp\left(\log|\widetilde{f}(e^{it})|\right) \quad \text{a.e.}$$

Since $\exp\left(\log|\widetilde{f}(e^{it})|\right) = |\widetilde{f}(e^{it})|$, it follows that $|\widetilde{F}(e^{it})| = |\widetilde{f}(e^{it})|$ a.e. $\square$

- Page 88, line 3. In the statement of Theorem 2.7.7.

  It reads: $F(z) = \exp\left(\frac{1}{2\pi}\int_0^{2\pi} \frac{e^{i\theta}+z}{e^{i\theta}-z} \log|f(e^{i\theta})|\, d\theta\right)$,

  It should read: $F(z) = \exp\left(\frac{1}{2\pi}\int_0^{2\pi} \frac{e^{i\theta}+z}{e^{i\theta}-z} \log|\widetilde{f}(e^{i\theta})|\, d\theta\right)$,

- Page 109, line 14. In the proof of Theorem 3.3.1.

  It reads: Then each h_n is in $\boldsymbol{H}^2$.

  It should read: Then each h_n is in $\widetilde{\boldsymbol{H}}^2$.

- Page 114, line 11. In the proof of Theorem 3.3.15.

  It reads: it contains $\sigma(T_\phi)$ by Theorem 1.2.11.

  It should read: it contains $\sigma(T_\phi)$ by Corollary 3.3.7.

- Page 114, line -2. In the proof of Theorem 3.3.15.

  It reads: implies that $\overline{f}e_n$ is in $\boldsymbol{L}^2 \ominus \boldsymbol{H}^2$

  It should read: implies that $\overline{f}e_n$ is in $\boldsymbol{L}^2 \ominus \widetilde{\boldsymbol{H}}^2$

- Page 156, line 10. In the proof of Theorem 4.5.7.

  It reads: $= a\left(\chi_{E\cup E^*}(e^{i\theta}) - \chi_{E\cap E^*}(e^{i\theta})\right) + 2b$

  It should read: $= a\left(\chi_{E\cup E^*}(e^{i\theta}) + \chi_{E\cap E^*}(e^{i\theta})\right) + 2b$

- Page 156, line -3. In the proof of Theorem 4.5.7.

  It reads: $= \chi_{E\cup E^*}(e^{i\theta}) - \chi_{E\cap E^*}(e^{i\theta}) = \chi_{E\cup E^*}(e^{i\theta})$,

  It should read: $= \chi_{E\cup E^*}(e^{i\theta}) + \chi_{E\cap E^*}(e^{i\theta}) = \chi_{E\cup E^*}(e^{i\theta})$,

- Page 167, line -4. In the proof of Lemma 5.1.9.

  It reads: $(f, C^* k_\lambda) = (f, k_{\phi(\lambda)})$

  It should read: $(f, C_\phi^* k_\lambda) = (f, k_{\phi(\lambda)})$

http://www.springer.com/978-0-387-35418-7

An Introduction to Operators on the Hardy-Hilbert Space
Martinez-Avendano, R.A.; Rosenthal, P.
2007, XII, 220 p., Hardcover
ISBN: 978-0-387-35418-7