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Erratum

Fabric-Diagram Contour Precision

It was brought to my attention that there is an erroneous factor of $1/4\pi$ involved in the formulas to deduce ρ_{opt} in my recent paper (Schaeben, 1982).

At the end of the proof of Theorem 2 (p. 211) it should read correctly

$$\|\operatorname{Var} f_n(\circ)\|_{X(S)} \leqslant \frac{\|f(\circ)\|_{X(S)}}{4\pi n a_n}$$

which affects formula (13) (p. 212) to be

$$E \int_S [f_n(x) - f(x)]^2 \, ds(x) \leqslant \frac{1}{4\pi n \Phi[\rho(n)]} + 4\pi \left(\frac{32}{e}\right)^2 L^2 [1 - (\Psi_\rho \chi_\rho)\hat{}(1)]^{2\alpha}$$

In the examples it should read correctly

$$C_1 = \frac{1}{\pi}, \qquad \text{formula (19), p. 214}$$

$$C_{RL} = \frac{4^{2\alpha}}{8\pi^2 \left(\frac{32}{e}\right)^2}, \qquad \text{formula (20), p. 214}$$

$$C_{FM} = 32\pi^2 \left(\frac{32}{e}\right)^2, \qquad \text{formula (23), p. 215}$$

Additionally a table is given of the correct values of Q_{opt} and its corresponding bound of the MISE in the case of the Riemann-Lebesgue-Schmidt mean, and the correct values of ρ_{opt}, $Q_{opt}^{.99}$, and its corresponding bound of the MISE in the case of the Fisher-von Mises mean for some frequently used sample sizes n. Q_{opt}^{W}, $0 \leqslant W \leqslant 1$ is defined as

$$\frac{\rho_{opt}}{4\pi \sinh(\rho_{opt})} \int_{Q_{opt}^{W}} \exp(\rho_{opt} xz) \, ds(z) = W$$

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Table 1. Optimal Properties of the Riemann-Lebesgue-Schmidt and the Fisher-von Mises Mean for $\alpha = 1, L = 1$

	Riemann-Lebesgue-Schmidt		Fisher-von Mises		
NN	QOPT	MISE	RHOOPT	Q99OPT	MISE
50	1.540	0.310	129.831	3.547	0.310
55	1.492	0.291	134.021	3.436	0.291
60	1.450	0.274	137.966	3.338	0.274
65	1.411	0.260	141.696	3.250	0.260
70	1.377	0.248	145.240	3.171	0.248
75	1.346	0.237	148.619	3.099	0.237
80	1.317	0.227	151.851	3.033	0.227
85	1.291	0.218	154.951	2.972	0.218
90	1.266	0.209	157.931	2.916	0.209
95	1.244	0.202	160.803	2.864	0.202
100	1.223	0.195	163.576	2.815	0.195
105	1.203	0.189	166.258	2.770	0.189
110	1.184	0.183	168.856	2.727	0.183
115	1.167	0.178	171.377	2.687	0.178
120	1.151	0.173	173.826	2.649	0.173
125	1.135	0.168	176.207	2.613	0.168
130	1.120	0.164	178.526	2.580	0.164

which in turn means

$$Q_{\text{opt}}^{W} = (1 - \cos\theta_w) \times 100\%, \qquad \text{with}$$

$$\cos\theta_w = \frac{1}{\rho_{\text{opt}}} \ln\,[(1 - w)\exp(\rho_{\text{opt}}) + w \exp(-\rho_{\text{opt}})]$$

REFERENCE

Schaeben, H., 1982, Fabric-diagram contour precision: Jour. Math. Geol., v. 14, p. 205-216.

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