List of Corrections

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This file contains corrections to the book

Euclidean Design Theory (SpringerBriefs of Statistics), Springer, 2019.

Please let me know if you are aware of any further mistakes or have other constructive comments.

Corrections

In the following list, line n means n-th line from the top and line $-n$ means n-th line from the bottom.

Page 4, line -7 (Proof of Proposition 1.1(ii)): "$\sum_{i,j} c_i c_j \Big(\sum_k \lambda_k v_{ki} v_{kj} \Big) \sum_{i,j} K_{ij}^{(2)}$" should be replaced by "$\sum_k \lambda_k \sum_{i,j} c_i c_j \Big(\sum_k v_{ki} v_{kj} \Big) K_{ij}^{(2)}$".

Page 8, line 22: The left hand side should be removed "$\sqrt{\pi}$", i.e.,

$$\ldots = -\frac{2^{t+1} t!}{H_t'(x_\ell) H_{t+1}(x_\ell)}.$$

Page 9, lines 4–9: We need to consider the case $\alpha = 0$ separately. In this case, it can be realized as the following limit relation

$$\lim_{\alpha \to 0} \alpha^{-1} C_n^{(\alpha)}(x) = (2/n) T_n(x), \quad n \geq 1$$

where T_n is the Chebyshev polynomial of degree n of the first kind (cf. Chihara [1, p.155], Szegö [2, p.80]). Moreover, the left hand side of (1.8) should be replaced by

$$\frac{1}{(1-2ux+x^2)^\alpha}.$$

Page 21, line 1: "$\int_{-1}^{1} \cdot \, du/2$" should be replaced by "$\int_0^1 \cdot \, du$".

Page 49, line 1: "$\phi_{\ell,2}(\omega) = \phi_{l,2}(\theta) = \sqrt{2}\cos(\ell\theta)$" should be replaced by "$\phi_{\ell,2}(\omega) = \phi_{\ell,2}(\theta) = \sqrt{2}\sin(\ell\theta)$".

Page 80, line -7: Change as follows:

$$\frac{1}{(1-u^4)(1-u^6)\cdots(1-u^{2d-2})(1-u^d)} = \begin{cases} 1+2u^4+u^6+3u^8+\mathcal{O}(u^{10}), & \text{if} \quad d=4, \\ 1+u^4+u^5+u^6+2u^8+\mathcal{O}(u^9), & \text{if} \quad d=5, \\ 1+u^4+2u^6+2u^8+\mathcal{O}(u^{10}), & \text{if} \quad d=6, \\ 1+u^4+u^6+u^7+2u^8+\mathcal{O}(u^{10}), & \text{if} \quad d=7, \\ 1+u^4+u^6+3u^8+\mathcal{O}(u^{10}), & \text{if} \quad d=8, \\ 1+u^4+u^6+2u^8+\mathcal{O}(u^{10}), & \text{if} \quad d\geq 9. \end{cases}$$

Page 81, line 7: Change as follows:

$$\dim \mathrm{Harm}_8(\mathbb{R}^d)^{D_d} = \begin{cases} 3, & d=4,8 \\ 2, & d\geq 5, d\neq 8. \end{cases}$$

Page 81, line 18: "..., $d \geq 4$, $d \neq 6$" should be replaced by "..., $d \geq 4$"

Page 81, line 22: "... the following polynomials $f_{8,1}, f_{8,2}, f_{8,3}$" should be replaced by "... the following polynomials $f_{8,1}, f_{8,2}, f_{8,3}$ and $f_{8,4}$"

Page 81, line -1: Add the following:
For $d = 8$

$$f_{8,4} = x_1x_2x_3x_4x_5x_6x_7x_8.$$

Page 82, line 12: "(i) For $d \geq 4$, $d \neq 6$" should be replaced by "(i) For $d \geq 4$"

Page 83, line 5: Add the following:
For $d = 8$

$$f_{8,4}(v_1) = \cdots = f_{8,4}(v_6) = 0, \quad f_{8,4}(v_7) = -\frac{1}{4096}, \quad f_{8,4}(v_8) = \frac{1}{4096}$$

Page 96, lines -4, -1 Change as follows:

$$\frac{1}{288}\sum_{x\in(v_1^{(1,0)})^{B_7}} f(x) + \frac{1}{36}f(0), \quad \frac{5}{288}\sum_{X} f(x) + \frac{1}{36}f(0).$$

Page 99, line 8: " $\cdots - \frac{6}{d-2}\left(As(s-1) + \frac{A(s-1)s}{2} + \cdots\right.$" should be replaced by $\cdots - \frac{6}{d-2}\left(As(s-1) + \frac{A^2(s-1)s}{2} + \cdots\right.$".

References

[1] Chihara, T.S.: An Intoroduction to Orthogonal Polynomials, Dover, (2011).

[2] Szegö, G.: Orthogonal Polynomials. Amer. Math.Soc. Colloq. Publ. Vol 23, Providence, (1975).