**From finite sample to asymptotic methods in statistics - Errata**

This page lists some typos and errors that were sent by readers or found by the authors. If you find an error, please send a note to acarlos@ime.usp.br

- Page 3
  - Line 14: **Replace** "...in item (b)." **by** "...in item (a)"
  - Line -16: **Replace** "$\Delta = \mu_X - \mu_Y$" **by** "$\Delta = \mu_Y - \mu_X$"
- Page 16
  - Expression 1.5.3: **Replace** "$-A_{11}A_{12}A_{22.1}^{-1}$" **by** "$-A_{11}^{-1}A_{12}A_{22.1}^{-1}$"
- Page 67
  - Exercise 2.3.8: **Replace**

    $$\boldsymbol{x}'\boldsymbol{A}^{-1}\boldsymbol{x} = \boldsymbol{x}_1'\boldsymbol{A}_{11}^{-1}\boldsymbol{x} + \boldsymbol{x}_{2:1}'\boldsymbol{A}_{22}^{-1}\boldsymbol{x}_{2:1}$$

    **by**

    $$\boldsymbol{x}'\boldsymbol{A}^{-1}\boldsymbol{x} = \boldsymbol{x}_1'\boldsymbol{A}_{11}^{-1}\boldsymbol{x}_1 + \boldsymbol{x}_{2:1}'\boldsymbol{A}_{22:1}^{-1}\boldsymbol{x}_{2:1}$$
  - Exercise 2.4.2: **Replace**

    $$f(x;\boldsymbol{\theta}) = (1/\sqrt{\theta_2})\theta_1^{\theta_2}[\exp(-\theta_1 x)]x^{\theta_1 - 1}$$

    **by**

    $$f(x;\boldsymbol{\theta}) = [1/\Gamma(\theta_2)]\theta_1^{\theta_2}[\exp(-\theta_1 x)]x^{\theta_2 - 1}$$
- Page 75
  - In expression on line 12, the numerator is $\sqrt{n}\ \overline{X}_n$
- Page 89
  - Last line in expression 4.3.4: It should be

    $$= P(A \mid B_i)P(B_i)/\sum_{j\in I} P(B_j)P(A \mid B_j),$$
  - Last 5 lines: Following the notation adopted in the book, all expectations should be typed as $\mathbb{E}$.
- Page 98

- Exercise 4.3.3: The distribution for $\pi(\theta)$ should be *inverse* gamma

- Page 110
  - Section 5.3, second line: Consider

$$P(X_n = 1) = p = 1 - P(X_n = -1)$$

- Page 118
  - Exercise 5.2.1: **Replace** "Set $U_n = \sum_{k=1}^{n-1} X_k^2$ and ..." **by** "Set $U_n = \sum_{k=2}^{n} X_k X_{k-1}$, $V_n = \sum_{k=1}^{n-1} X_k^2$ and ..."
  - Exercise 5.3.2: **Replace by** $\sqrt{\frac{2}{\pi n}}$
  - Exercise 5.4.2: **Replace** $X_{\tau+1} - X_\tau$ **by** $X_{\tau+t} - X_\tau$ everywhere in the exercise.

- Page 123
  - Line 19: **Replace** "...for every $\eta > 0$, $\varepsilon > 0$, there exists a positive integer $n(\varepsilon, \eta)$, such that..." **by** "...for every $\eta > 0$, there exists $K = K(\eta)$ and a positive integer $n(\eta)$, such that..."

- Page 133
  - Last line: **Replace**

$$\frac{\partial^2}{\partial w^2} \log g(w)|_{w=w^*} = [(\pi + \varepsilon)^{-1} - 1]\pi^2/(1-\pi)^2 > 0,$$

**by**

$$\frac{\partial^2}{\partial w^2} \log g(w)|_{w=w^*} = [(\pi + \varepsilon)^{-1} - 1]\pi^2(1 - \pi - \varepsilon)^2/(1-\pi)^2 > 0,$$

- Page 147
  - Line 15: **Replace**

$$P\left(\max_{M \le k \le N} |\overline{X}_n - \overline{\mu}_n| > \varepsilon\right) = \cdots$$

**by**

$$P\left(\max_{M \le k \le N} |\overline{X}_k - \overline{\mu}_k| > \varepsilon\right) = \cdots$$

- Page 162
  - Line 25: **Replace** "...with the $s_k^2$ being replaced by..." **by** "...with the $T_k^2$ being replaced by..."
- Page 170
  - Exercise 6.2.4: **Replace** (1.5.49) **by** (1.5.59).
  - Exercise 6.2.7: **Replace** "Consider the Bin$(n, p)$ distribution. Let $T = \pi$ and consider the estimator $T_n = n^{-1}X_n$" **by** "Let $X_n$ have the Bin$(n, \pi)$ distribution and then, consider the estimator $T_n = n^{-1}X_n$.
- Page 182
  - Line -7: **Replace**"...apply the Jensen Inequality (1.5.40) to conclude..." **by** "...apply the Jensen Inequality (1.5.43) to conclude..."
- Page 190
  - Line 3: **Replace** "...suppose that $s_n \to \infty$ as..." **by** "...suppose that $\tau_n \to \infty$ as..."
- Page 192
  - Line 3: **Replace**

    $$= \frac{1}{\sigma^2} \sum_{i=1}^{n} c_{ni}^2 \mathbb{E}[(Y_i - \mu)^2 I(|Y_i - \mu| > \varepsilon\sigma/c_{ni})]$$

    **by**

    $$= \frac{1}{\sigma^2} \sum_{i=1}^{n} c_{ni}^2 \mathbb{E}[(Y_i - \mu)^2 I(|Y_i - \mu| > \varepsilon\sigma/|c_{ni}|)]$$
- Page 203
  - Line 16: **Replace**

    $$\leq P(X_n \leq x - c + \varepsilon) + P(|Y_n - c| > \varepsilon.$$

    **by**

    $$\leq P(X_n \leq x - c + \varepsilon) + P(|Y_n - c| > \varepsilon).$$

- Page 210
  - Line -3: **Replace**

    $$\sqrt{n}[g(T_n) - g(\theta)]/\sigma g'(\theta) \xrightarrow{\mathcal{D}} \mathcal{N}(0,1).$$

    **by**

    $$\sqrt{n}[g(T_n) - g(\theta)]/[\sigma g'(\theta)] \xrightarrow{\mathcal{D}} \mathcal{N}(0,1).$$

- Page 213
  - Line 16: **Replace** "$1/2\mu\sigma$ exist;" **by** "$(2\mu\sigma)^{-1}$ exist;"
- Page 215
  - Line 22: **Replace**

    $$G_n(\boldsymbol{\lambda}) \xrightarrow{\mathcal{D}} \mathcal{N}[0, \boldsymbol{\lambda}'\overset{\bullet}{\boldsymbol{g}}(\boldsymbol{\theta})\boldsymbol{\Sigma}\dot{\boldsymbol{G}}'(\boldsymbol{\theta})\boldsymbol{\lambda}]$$

    **by**

    $$G_n(\boldsymbol{\lambda}) \xrightarrow{\mathcal{D}} \mathcal{N}[0, \boldsymbol{\lambda}'\overset{\bullet}{\boldsymbol{G}}(\boldsymbol{\theta})\boldsymbol{\Sigma}[\overset{\bullet}{\boldsymbol{G}}]'\boldsymbol{\lambda}]$$

- Page 219
  - Line 5: **Replace** "*if and only if,* $\boldsymbol{A}$ *is a generalized inverse* $\boldsymbol{\Sigma}$" **by** "*if and only if,* $\boldsymbol{A}$ *is a generalized inverse of* $\boldsymbol{\Sigma}$"
- Page 221
  - Expression for $Q_m$: Last $\mathbf{1}$ should be $\mathbf{1}_p$
  - Line 10: **Replace** "that it" **by** "that is"
- Page 237
  - Exercise 7.1.3: First expression for the variance of $T_n$ should be $\mathbb{V}\text{ar}(T_n) = \overline{\pi}_n(1 - \overline{\pi}_n) - \sum_{i=1}^{n}(\pi_{ni} - \overline{\pi}_n)^2$.
- Page 247
  - **Replace** $\boldsymbol{\theta}$ and $\widetilde{\boldsymbol{\theta}}$ **by** $\theta$ and $\widetilde{\theta}$ respectively