# Measure and Probability:(ISBN- 14 3980 126 6) Typos list

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**Errata List:** If you find any errors (typographical or otherwise) and they are not on the list below then please email us at athreya@isibang.ac.in or sunder@imsc.res.in. We will really appreciate it. Thanks.

**Page 2, line -12:** ":" should be replaced by "."
**Page 6, line 11** "$B, M, S$" should be "$\mathcal{B}, \mathcal{M}, \mathcal{S}$"
**Page 7, line 10** Replace

$$\mathcal{M} = \{A \in \mathcal{M}(A) : \mathcal{M}_A = \mathcal{M}(A)\}$$
$$= \{A \in \mathcal{M}(A) : E \in \mathcal{M}(A) \Rightarrow E \cup A \in \mathcal{M}(A)\}.$$

by

$$\mathcal{M} = \{A \in \mathcal{M}(\mathcal{A}) : \mathcal{M}_A = \mathcal{M}(\mathcal{A})\}$$
$$= \{A \in \mathcal{M}(\mathcal{A}) : E \in \mathcal{M}(\mathcal{A}) \Rightarrow E \cup A \in \mathcal{M}(\mathcal{A})\}.$$

**Page 43, Line -3:** "Let $X, Y$ be two random variables ..." should be replaced by "Let $X$ be a random variable ..."
**Page 45, Definition 3.2.1:** "$P(\cap_{i=1}^n A_i) = \prod_{i=1}^n P(A_i)$" should be replaced by

$$P(\cap_{i=1}^n A_i^{\epsilon_i}) = \prod_{i=1}^n P(A_i^{\epsilon_i}),$$

where $\epsilon_i \in \{0, 1\}$, $A_i^0 := A_i$ and $A_i^1 := A'$.
**Page 70, paragraph 3:** In the proof of Kolmogorov's Consistency Theorem (Th. 4.4.4), the third paragraph on page 70 should be changed to read as follows:

So, suppose $\varepsilon > 0$. Since, by assumption, $P|\mathcal{B}_{n]}$ is a probability measure, we can, by Proposition 4.4.2, find a compact set $C_n \subseteq E_n$ such that $P(A_n \setminus$

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$B_n) \leq \varepsilon/2^{n+1}$, where $B_n = \pi_{n]}^{-1}(C_n)$. Note that if $\widetilde{A}_n = \cap_{k=1}^n B_k$, then $\widetilde{A}_n \in \mathcal{B}_{n]}$ and in fact $\widetilde{A}_n = \pi_{n]}^{-1}(K_n)$ where $K_n = \{(x_1, \cdots, x_n) \in C_n : (x_1, \cdots, x_k) \in C_k$ for $1 \leq k \leq n\}$ is a compact subset of $\mathbb{R}^n$. Now

$$
\begin{aligned}
P(A_n \setminus \widetilde{A}_n) &= P(A_n \setminus \cap_{k=1}^n B_k) \\
&\leq \sum_{k=1}^n P(A_n \setminus B_k) \\
&\leq \sum_{k=1}^n P(A_k \setminus B_k) \\
&< \varepsilon/2
\end{aligned}
$$

and hence, $P(\widetilde{A}_n) \geq \varepsilon/2$ for all $n$, and hence each $K_n$ is a non-empty compact set.

**Page 75, (5.1.2):** should read as :

$$
f_\sigma(x) = \frac{1}{2\pi} \int_{-\infty}^{\infty} e^{-itx} \phi_X(t) e^{-\frac{\sigma^2 t^2}{2}} dt
$$

**Page 76, line 2:**

$$
= \int_{\mathbb{R}} e^{-iay} \phi_X(y) e^{-\frac{\sigma^2 y^2}{2}} dy
$$

should be changed to

$$
= \frac{1}{2\pi} \int_{\mathbb{R}} e^{-iay} \phi_X(y) e^{-\frac{\sigma^2 y^2}{2}} dy
$$

**Page 76, Lemma 5.1.7:** $(\Omega, \mathcal{B})$ should be replaced by $(\mathbb{R}, \mathcal{B}_{\mathbb{R}})$
**Page 76, line -1:** "real-valued" should be replaced by "non-negative"
**Page 83, line -6:** "$\forall n \geq m$" should be changed to "$\forall n \geq m_1$"
**Page 83, line -7:** "$\forall n \geq m$" should be changed to "$\forall n \geq m_1$"
**Page 85, line -9:** "$1 \leq i \leq n$ " should be changed to "$1 \leq i \leq n - 1$"
**Page 93, line 11:** "$A \in \mathcal{B}$" should be changed to "$A \in \mathcal{F}$"
**Page 116, Line 1:** "$f : \mathbb{N} \to \mathbb{R}$" should be changed to "$f : S \to \mathbb{R}$"
**Page 140, (7.1.3):** should read as

$$
E_1, E_2 \in \mathcal{B}, \ E_2 \in \mathcal{C}_F, \ E_1 \subset E_2 \ \Rightarrow \ E_1 \in \mathcal{C}_F.
$$

**Page 140, line -6:** ".. in the notation of (3).." should be changed to "..in the notation of (2).."

**Page 150, line 4:** "$X$" should be changed to "$\Omega$".

**Page 153, line -4:** should be changed to

$$\Longrightarrow g1_E = 1_E \ \ \rho \text{ a.e.}$$

**Page 160, line 8:** should be changed to

$$|x - m_k| \le \lambda(I) + \frac{1}{2}\lambda(I_k) \le s_{k-1} + \frac{1}{2}\lambda(I_k) < 2\lambda(I_k) + \frac{1}{2}\lambda(I_k) = \frac{5}{2}\lambda(I_k).$$

**Page 160, line -7:** "$\mathbb{R}$" should be changed to "$[a,b]$" and "$x \in \mathbb{R}$" should be changed to "$x \in [a,b]$"

**Page 161, line 17:** "Proposition 4.4.1" should be changed to "Lemma 4.4.1"

**Page 161, line -3:** "such that $J_j^y = (y - j, y + j) \subset I_i$" should be replaced by "such that $J_j^y = (y - k_j, y + k_j) \subset I_i$"

**Page 161, line -1:**
$$f(y + j) - f(y) > qj,$$

should be changed to
$$f(y + j) - f(y) > qk_j,$$

**Page 162, line 1:** "for all $j \le k(y)$." should be changed to "for all $k_j \le k(y)$."

**Page 162, line 7:** "$= p\sum_{k=1}^n h_k$" should be changed to "$= 2p\sum_{k=1}^n h_k$"

**Page 163, line -1:** "$N^a(x) := \sup_{\pi \in \mathcal{P}[a,x]} \sum_{i=1}^k -[(f(x_i) - f(x_{i-1})^-$" should be replaced by "$N^a(x) := \sup_{\pi \in \mathcal{P}[a,x]} \sum_{i=1}^k [(f(x_i) - f(x_{i-1})^-$"

**Page 164, Proposition 7.5.7:** Here and for the rest of the section: $\lambda$ denotes Lebesgue measure.