

APPLIED STOCHASTIC PROCESSES — MARIO LEFEBVRE

ERRATA

- 1) Page 66, line 2: $\{X_n, n = 1, 2, \dots\}$ should be: $\{X_n, n = 0, 1, \dots\}$.
- 2) Page 86, line -10: If $i \rightarrow j$ or $j \rightarrow i$ should be: If $i \rightarrow j$ and $j \rightarrow i$.
- 3) Page 137, line 17: the paragraph starting with “If we assume rather that ...” should be replaced by:

If we assume rather that, when an individual gives birth to a descendant, there is a probability p (respectively $1 - p$) that this individual remains in (resp. disappears from) the population, then the process $\{X(t), t \geq 0\}$ remains a pure birth process. We can show (proceeding as in Proposition 5.1.2) that $\lambda_i = ip\lambda$. Suppose that $X(0) = 1$. We may write that

$$P[\tau_1 \leq t] = \sum_{k=1}^{\infty} p(1-p)^{k-1} P[X_1 + \dots + X_k \leq t] \quad (3.278)$$

where the X_i 's are independent random variables that all have an exponential distribution with parameter λ . This result follows from the fact that we perform independent trials for which the probability of success, that is, the case when the individual remains in the population, is equal to p . Actually, τ_1 is an infinite linear combination of independent gamma distributions. We can show that it does indeed have an exponential distribution with parameter $p\lambda$.

- 4) Page 308, line 8: between the $(i - 1)$ st and the i th should be: between the i th and the $(i + 1)$ st.

- 5) Page 342, line -3: $P \left[\bigcap_{i=1}^k \{N_i = n_i\} \right]$ should be: $\prod_{i=1}^k P[N_i = n_i]$.



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