Errata for Loss Models, 2nd ed., July 6, 2006

Items marked with a * have been corrected in the second printing. Items marked ** have been corrected in the third printing. Items marked *** have been corrected in the fourth printing. All other items have not appeared in a later printing.

***Page 35**: In Figure 3.6 the caption should refer to Model 3.

*Page 49**: In the development of μ'_k, the word "integral" in the last line should be "integer."

*Page 62**: In Example 4.31, the resulting distribution is inverse Burr, not Burr.

Page 77: In lines two to four from the bottom change "long" to "heavy" and "short" to "light". While heavy/light and long/short are both used to describe tails, these changes bring a consistent use of heavy/light throughout the text.

*Page 102**: In Example 4.61, delete the expression "$|\theta$" in the two places it appears.

*Pages 103-104**: In the solution to Example 4.64, the sentence at the bottom of page 103 should be: This means that about 94% of drivers were "good" with a risk of $\lambda_1 = 0.11$ expected accidents per year and 6% were "bad" with a risk of $\lambda_2 = 0.70$ expected accidents per year.

Page 106: Change Example 4.69 to read "Use the above results and (4.31) to demonstrate ..."

***Page 123**: In Exercise 5.13 change "that" to "given it".

***Page 128**: In Exercise 5.16 change Y to Y^P both times it appears.

Page 139: At the end of the paragraph following (6.2) change "Such distributions are said to be infinitely divisible" to "Such distributions can be shown to be infinitely divisible"

*Page 142**: Equation (6.6) requires a second power on the final term of the second equation. The correct equation is

$$\mathrm{Var}(S) = \mu_{S2} = \mu'_{N1}\mu_{X2} + \mu_{N2}(\mu'_{X1})^2$$

***Page 170**: In Exercise 6.36 replace f_{i+1} with f_i and set $i = 1, 2, \ldots$ not $i = 0, 1, 2, \ldots$.

Page 171: In Exercise 6.41(a) the left hand side should be $f_S(x)$, not $f_X(x)$.

Page 192: In line 1 change "long" to "heavy". See comment on Page 77 errata.

***Page 275**: In Definition 9.16 add "random" between "a pair of" and "values".

Page 276: In Example 9.17, the first line of the solution, it should state $\mathrm{Var}(\hat{\theta}) = \sigma^2/n$.

***Page 277**: In Exercise 9.11, in part (b) add "as in equation (9.4)" and in part (c) add "as in Example 9.18".

Page 292: In Exercise 10.2, eliminate part (b) and change (c) to (b).

***Page 293**: Add a footnote to the sentence just before Definition 10.12 - Technically, for the interval from c_{j-1} to c_j, $x = c_j$ should be included and $x = c_{j-1}$ excluded in order for $F_n(c_j)$ to be the empirical distribution function.

Page 295: In Exercise 10.5, in part (b) the reference should be to part (a).

Page 299: In equation (11.2) change the middle line to (number of x_is equal to y_{j-1}). The current version is correct, this reflects the fact that by definition xs are always equal to ys.

Page 303: The second integral at the top of the page should be $\int_0^t h(u)du$.

Page 316: In Exercise 11.20 change /two2 to two.

***Page 325**: At the end of the sentence that ends on the third line add “, noting that policy 33 is assumed to enter at mid-duration, 1.5."

Page 359: In Exercise 12.64, use the data from Exercise 12.44, but do not assume that α is known.

Page 360: In Exercise 12.66(c) the expression should be $V\hat{a}r(\hat{\mu}) = \frac{\hat{\mu}^2}{n\tau^2}$.

Page 366: In the last paragraph of Example 12.37 change "The solid vertical bars" to "The thinner vertical bars"

*Page 379**: In Exercise 12.75(a) the pdf should be

$$f_{X_j}(x_j) = \frac{\Gamma(\alpha + \frac{1}{2})}{\sqrt{2\pi\beta}\ \Gamma(\alpha)}\left[1 + \frac{1}{2\beta}(x_j - \mu)^2\right]^{-\alpha-1/2}, \ -\infty < x_j < \infty.$$

Note that the two appearances of β have have been moved.

*Page 380**: In Exercise 12.79 replace “also a parameter” with“a known parameter.”

***Page 417**: In Exercise 12.103 rewrite the last sentence as “Determine a 95% linear confidence interval for $\beta_1 - \beta_2$ and then use the result to obtain a confidence interval for the relative risk of a male child compared to a female adult.

*Page 494**: In the definition of the curvature-adjusted cubic spline, the requirement in parentheses should be (m_0 and m_n fixed). There is no requirement that they also be equal.

***Page 508**: In line 2 the reference should be to equation (15.15). In the equation just after the phrase “after dividing the derivative by 2" the right hand side should be $\mathbf{0}^T$ instead of $\mathbf{0}$.

***Page 520**: In the second line following (16.5) the integral should be $\int E(X|Y = y)f_Y(y)dy$.

***Page 530**: In line 2 of Section 16.3 change “part of the century" to “1900s".

Page 534: In the second line of Case 2 change $\mathrm{Var}(Y_j)$ to $\mathrm{Var}(X_j)$.

***Page 540**: In Exercise 16.10 the reference should be to Example 16.9, not 16.10.

*Page 541**: In Exercise 16.18 add an assumption that the number of claims has the Poisson distribution.

Page 552: In the second to last line $\mu = \alpha\beta$ should be $\mu_{n+1} = \alpha\beta$.

*Page 567**: About one-third way down the page replace “Suppose, for example,” with “We parameterize such”.

*Page 616**: In the table near the top of the page, in the column ”the simulated value is” the entries should be 0, 1, 2, 3, and 4 rather than all zeros.

***Page 617**: The middle part of the sentence about two-thirds the way down the page should be ... a is the greatest integer less than or equal to $0.9n + 0.5 - 1.96\sqrt{0.9(0.1)n}$, b is the smallest integer greater than or equal to $0.9n + 0.5 + 1.96\sqrt{0.9(0.1)n}$, and the process terminates when both ...

*Page 618**: In Exercise 17.4, the term 1% in the last line should be 2%.

***Page 624**: In the first equation on the page, delete the 27 from the denominator and multiply the last term in the numerator by (1/27). The correct expression is

$(2-4)^2(1/27) + (\frac{7}{3} - 4)^2(3/27) + \cdots + (7-4)^2(1/27) = 14/9$.

***Page 640**: The formula for $\mathrm{E}[(X \wedge x)^k]$ for the single-parameter Pareto distribution only applies for $x \geq \theta$.

Errata for the Solutions Manual to Accompany Loss Models, 2nd ed., July 6, 2006. All remain uncorrected in published versions. Those marked with a * are new since the November 2005 errata list.

Page 20, **Exercise 4.10**: The first sentence should state that the density if the sum of five, not six, function.

Page 23, **Exercise 4.14**: The gamma and lognormal densities are equal at 2,221, not 2,617. The gamma density is $0.62851x^{-0.8}e^{-0.002x}$.

Page 27, **Exercise 4.25**: The differential $d\lambda$ is missing from the end of the first line.

Page 30, **Exercise 4.35**: The last entry should read $1 - F_Y(2.2) = (2.2/1.1)^{-3} = 0.125$.

Page 37, **Exercise 4.50**: In the last line replace $\sum_{i=1}^{n} m\lambda_i$ with $\sum_{i=1}^{n} \lambda_i$.

*__Page 62__, **Exercise 6.16**: $E(A) = 50k^{-1} - 50 + 12.5k$. When set equal to $50k$ the solution of $k = 2/3$ is correct.

*__Page 66__, **Exercise 6.31**: The correct calculation, using μ for the mean is $E(S) = E[E(S|\mu)] = E(\mu) = 300,000$.

*__Page 72__, **Exercise 6.46**: With $f_2 = 11/29$ the expected number of claims is $29(11/29) = 11$.

Page 115: **Exercise 9.10**: Because the problem did not specify which MSE should be in the numerator, $0.32/0.2 = 1.6$ is also a correct answer.

Page 119, **Exercise 10.2**: Delete the solutions to (b) and (c) and reletter (d) to (b).

Page 121, **Exercise 10.5**: Delete part (a) and reletter part (b) to (a) and part (c) to (b).

Page 136, **Exercise 11.25**: The last column in Table 11.7 should be headed $q_j^{\prime(w)}$ rather than $q_j^{\prime(d)}$.

Page 136, **Exercise 11.26**: In Table 11.8 the second entry in the first column should be 45.4 instead of 45.6. This changes the second r value to 7. The five probabilities in the last column should be 0.875, 0.750, 0.656, 0.549, and 0.438. The answer is then $\hat{q}_{45} = 0.250$ and $\hat{q}_{46} = 0.416$.

*__Page 142__, **Exercise 12.13**: Delete part (a) and remove the lable (b) from the second part.

Page 152, **Exercise 12.43**: Delete part (b).

*__Page 159__, **Exercise 12.60(b)**: Referece should be to Exercise 12.43.

Page 160, **Exercise 12.64**: Delete the reference to Exercise 12.14.

*__Page 161__, **Exercise 12.66(b)**: The last term in the expression for $\ln f(x)$ should be $+(\tau - 1)\ln x$ and not $-(\tau - 1)\ln x$. Make the same change in the expression for $l(\mu)$.

Page 163, **Exercise 12.67**: Change $W = \ln Y - 100$ to $W = \ln Y - \ln 100$.

Page 166, **Exercise 12.75(a)**: In line 2, the extra e should be deleted; in line 3 the a in the superscript should be α; and in line 4 the β should be under the square root along with the 2π.

Page 167, **Exercise 12.78**: In the second to last line, the variable is X, not x, so write E$(X) = \mu(\theta)$.

Page 169, **Exercise 12.80**: The last line should be - But $\pi(\theta|s) \propto f(s|\theta)\pi(\theta) \propto \frac{e^{-\theta s}}{[q(\theta)]^n}\pi(\theta)$.

*__Page 175__, **Exercise 12.98(e)**: $\hat{q} = 0.166/7 = 0.0237143$.

Page 206, **Exercise 15.5**: For part (c), the fifth line should be $f_0''(0) = 0, f_1''(0) = 4$.

Page 212, **Exercise 16.2(d)**: Using fractions, the exact variance of 0.6 can be obtained.

Page 216, **Exercise 16.11**: There is no error here, but there may be confusion because λ is defined not as the expected number of claims per policy, but rather as the expected total number of claims. In this problem λ and λ_0 are identical.

Page 218, **Exercise 16.22(h)**: The $\frac{1}{6}$ should be outside the brackets and the first term inside the brackets should be $\frac{25(1)}{900}$. The answer is correct.

Page 227, **Exercise 16.30**: In the last line, add a minus sign to produce $p(m,x) = \left(\frac{m}{2\pi x^3}\right)^{1/2} \exp(-\frac{m}{2x})$

Page 227, **Exercise 16.31(d)**: Replace the given text with ”This is the usual Bühlmann-Straub credibility premium, updated with inflation.

Page 228, **Exercise 16.32**: In the first and second lines, remove the negation in the exponents of the pgfs. Then $P_{X_j}(z|\theta) = e^{\theta(z-1)}$ and $P_S(z|\theta) = e^{n\theta(z-1)}$.