Corrections in Manuscript
July 18, 2022

Page 434, Equation A.12

Replace $\ln\left(\frac{\Gamma(y_i+\psi)}{\Gamma(\psi)}\right)=\sum_{j=0}^{y-1}\ln(j+\psi)$ with $\ln\left(\frac{\Gamma\left(y_i+\psi^{-1}\right)}{\Gamma\left(\psi^{-1}\right)}\right)=\sum_{j=0}^{y-1}\ln\left(j+\psi^{-1}\right)$

Page 434, Equation A.13

Replace $\ln L(\psi,\beta)=\sum_{i=1}^{n}\left\{\left(\sum_{j=0}^{y-1}\ln(j+\psi)\right)-\ln y_i!-(y_i+\psi)\ln\left(1+\psi^{-1}\mu_i\right)+y_i\ln\psi^{-1}+y_i\ln\mu_i\right\}$ with

$$\ln L(\psi,\beta)=\sum_{i=1}^{n}\left\{\left(\sum_{j=0}^{y-1}\ln\left(j+\psi^{-1}\right)\right)-\ln y_i!-\left(y_i+\psi^{-1}\right)\ln(1+\psi\mu_i)+y_i\ln\psi+y_i\ln\mu_i\right\}$$

Page 434, Equation A.14

Replace

$$\ln L(\psi,\beta)=\sum_{i=1}^{n}\left\{y_i\ln\left(\frac{\psi\mu_i}{1+\psi\mu_i}\right)-\psi^{-1}\ln(1+\psi\mu_i)+\ln\Gamma\left(y_i+\psi^{-1}\right)-\ln\Gamma(y_i+1)-\ln\Gamma\left(\psi^{-1}\right)\right\}$$ with

$$\ln L(\psi,\beta)=\sum_{i=1}^{n}\left\{y_i\ln\left(\frac{\psi^{-1}\mu_i}{1+\psi^{-1}\mu_i}\right)-\psi\ln\left(1+\psi^{-1}\mu_i\right)+\ln\Gamma(y_i+\psi)-\ln\Gamma(y_i+1)-\ln\Gamma(\psi)\right\}$$

Page 435, equation A.19

Replace $\ln L(\psi,\beta)=\sum_{i=1}^{n}\left\{\left(\sum_{j=0}^{y-1}\ln(j+\psi\mu_i)\right)-\ln y_i!-(y_i+\psi\mu_i)\ln\left(1+\psi^{-1}\right)+y_i\ln\psi^{-1}\right\}$ with

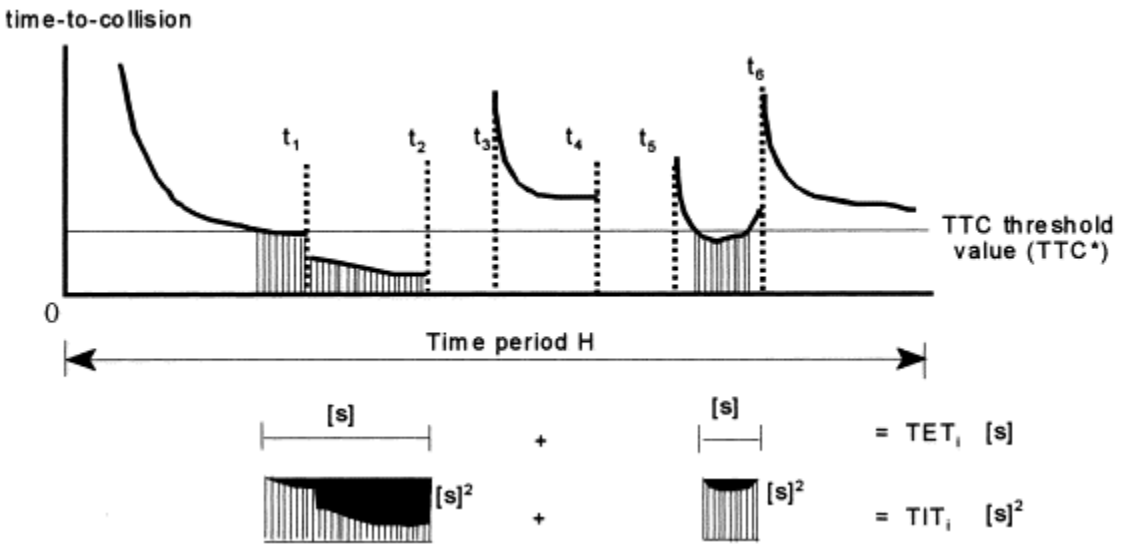
$$\ln L(\psi,\beta)=\sum_{i=1}^{n}\left\{\left(\sum_{j=0}^{y-1}\ln\left(j+\psi^{-1}\mu_i\right)\right)-\ln y_i!-\left(y_i+\psi^{-1}\mu_i\right)\ln(1+\psi)+y_i\ln\psi\right\}$$

Prior to December 28, 2021

Page 69, first line in Exercise 3.1

The state of “Texas” should be “Michigan”

Page 377, Replace figure 11.2 with



Source: Minderhoud, M.M., Bovy, P.H., 2001. Extended time-to-collision measures for road traffic safety assessment. Accid. Anal. Prev. 33, 89e97. https://doi.org/10.1016/S0001-4575(00)00019-1. PMID:11189125. (already in the reference list)

Prior to November18, 2021

Page 21 (bottom paragraph):

e.g., lane and should widths -> shoulder widths

Page 72 (middle page):

υ > 1 -> Over-Dispersion
υ < 1 -> Under-Dispersion

Page 77:

Middle matrix should be

$$\mathbf{x} = \begin{bmatrix} x_{11} & \cdots & x_{1p} \\ \vdots & \ddots & \vdots \\ x_{n1} & \cdots & x_{np} \end{bmatrix}$$

Page 99:

This reference is missing:

Pew, T., Warr, R.L., Schultz, G.G., Heaton, M. (2020) Justification for considering zero-inflated models in crash frequency analysis. Transportation Research Interdisciplinary Perspectives, 8, 100249

Page 199 (last paragraph):

"where μ is predicted crashes of an entity;" should be "where μ is the predicted crashes of an entity;"

Page 207, Table 6.3:

Some of the notations did not show well in the manuscript. Replace with this:

Parameter	Intervals
μ	$\left[\frac{\hat{\mu}}{e^{1.96\sqrt{Var(\hat{\eta})}}}, \hat{\mu}e^{1.96\sqrt{Var(\hat{\eta})}}\right]$
m	$\left[\max\left\{0, \hat{\mu}-1.96\sqrt{\hat{\mu}^2\,\mathrm{var}(\hat{\eta})+\frac{\hat{\mu}^2\,\mathrm{var}(\hat{\eta})+\hat{\mu}^2}{\phi}}\right\}, \hat{\mu}+1.96\sqrt{\hat{\mu}^2\,\mathrm{var}(\hat{\eta})+\frac{\hat{\mu}^2\,\mathrm{var}(\hat{\eta})+\hat{\mu}^2}{\phi}}\right]$
y	$\left[0, \left\lfloor \hat{\mu}+\sqrt{19}\sqrt{\hat{\mu}^2 Var(\hat{\eta})+\frac{\hat{\mu}^2 Var(\hat{\eta})+\hat{\mu}^2}{\phi}}+\hat{\mu}\right\rfloor\right]$
Note: $Var(\hat{\eta}) = XI^{-1}X^T$ where I^{-1} is the variance-covariance matrix and X is a matrix containing observed values in logarithmic form. $\lfloor x \rfloor$ denotes the largest integer less or equal than x	

Page 208:

The reference for Table 6.5 should be "Lord and Miranda-Moreno (2008)"

Page 216:

The reference "Miranda-Moreno, L.F., Lord, D., Fu, L., 2008. Evaluation of Alternative Hyper-Priors for Bayesian Road Safety Analysis."

should be

"Lord, D., and L.F. Miranda-Moreno (2008) Effects of Low Sample Mean Values and Small Sample Size on the Estimation of the Fixed Dispersion Parameter of Poisson-gamma Models for Modeling Motor Vehicle Crashes: A Bayesian Perspective. Safety Science, Vol. 46, No. 5, pp. 751-770."

Page 229 (middle of last paragraph):

Replace word “should” with “shoulder”

Page 234, Section 7.4.1.1:

Table 6.3 should be Table 6.4

Page 252 (bottom of example 7.5):

Remove the word “collect.”

Page 255 (middle):

Table 6.3 should be Table 6.4

Page 255 (bottom):

Table 6.4 should be Table 6.5

Page 268 (middle paragraph – last sentence):

Change word “worse” to “worst.”

Page 288 (bottom of page):

“Note that Guo et al. (2020) has expanded…” should be “Note that Guo et al. (2020) <u>have</u> expanded…”