Errata list for *Spatial Methods for Modeling Extreme and Rare Events* by Samuel Morris
August 22, 2016

The following list of edits correct typographical and minor grammatical errors. Edits are indicated as follows:

- Additions
- ~~Deletions~~

In certain cases (e.g. addition of a period) this may be further clarified to help distinguish between the font colors of blue and black.

Chapter 3

- In Section 3.1, 3 lines before end of paragraph 2: We ~~chose~~ choose to use this low-rank ....
- In Section 3.2, the symbol ^{T} and $^\top$ are used to indicate transpose. This has been changed to $^\top$ to be consistent with the rest of the dissertation.
- In Section 3.2, 2 lines above equation (3.2) positive stable (PS) random effects.
- In Section 3.2, Equation 3.2: $Z(\mathbf{s}_i)$ instead of $\mathbf{Z}(\mathbf{s}_i)$, and the first parameter of the GEV is $\mathbf{X}(\mathbf{s}_i)^\top\boldsymbol{\beta} + \dfrac{\theta(\mathbf{s}_i)^\xi - 1}{\xi}$
- In Section 3.3, 2nd line from the end: when ~~the~~ n is large.
- In Section 3.4, Line 1: Assume that $Z(\mathbf{s}_1)$ and $Z(\mathbf{s}_2)$ are both ...
- In Section 3.4, ... dependence between binary variables is Cohen's ~~K~~kappa
- The plots and captions in Figures 3.2 – 3.4 of the dissertation were incorrect. These have been updated (see Figure 1 – Figure 3 of errata).
- Section 3.6, line 3: We generate data ~~assuming three possible types of~~ from three possible underlying processes.
- In Section 3.6.3, end of line 3: Changed s to $\mathbf{s}$ in $\mathbf{X}(\mathbf{s})^\top\boldsymbol{\beta}$
- In Section 3.6.5, line 3: $P[Y(\mathbf{s}~~)~~^*_j) = 1]$.
- In Section 3.6.5, line 4: ... for each ~~j~~ $\mathbf{s}^*_j$.
- In Section 3.6.6, line 3: ... probit model in all cases ~~,~~ and by the logistic ...

Chapter 4

- In Section 4.1, Line 1: The spatial ~~E~~extreme ~~V~~value ~~A~~analysis literature ....
- In Section 4.1, 2 lines from bottom: Gaussian data, ~~P~~principle ~~C~~components ~~A~~analysis.
- In Section 4.1, last line: ~~E~~empirically ~~O~~orthogonal ~~F~~functions.

- In Section 4.2, 2 lines above equation (4.1): marginal distributions.
- Page 59, last line: De Haan and Ferreira (~~1984~~ 2006)
- On page 50, last line of the 1st paragraph: associated with one particular location. ~~and s~~ So to simplify notation we let $B_l(\mathbf{s}) = B(\mathbf{s}; \mathbf{k}_l)$. (both periods are added.)
- On page 53, Line 3: conditioned on the values for the other locations and
- On page 53, Line 1 of Paragraph 2: These function ~~provide~~ are a useful tool for exploratory data analysis ~~technique~~.
- On page 61, 2nd line below equation (4.18): Finally, let $Q90_{i,t}$ be the posterior mean ...
- On page 65, Line 2: of L is given in Table 4.2 for 1,000 iterations.
- Page 65, Line 3 of final paragraph: There is very strong evidence ...
- Page 66, In the final paragraph, the subscript is changed from A_{kt} to A_{lt} to keep a consistent subscript for the knot.

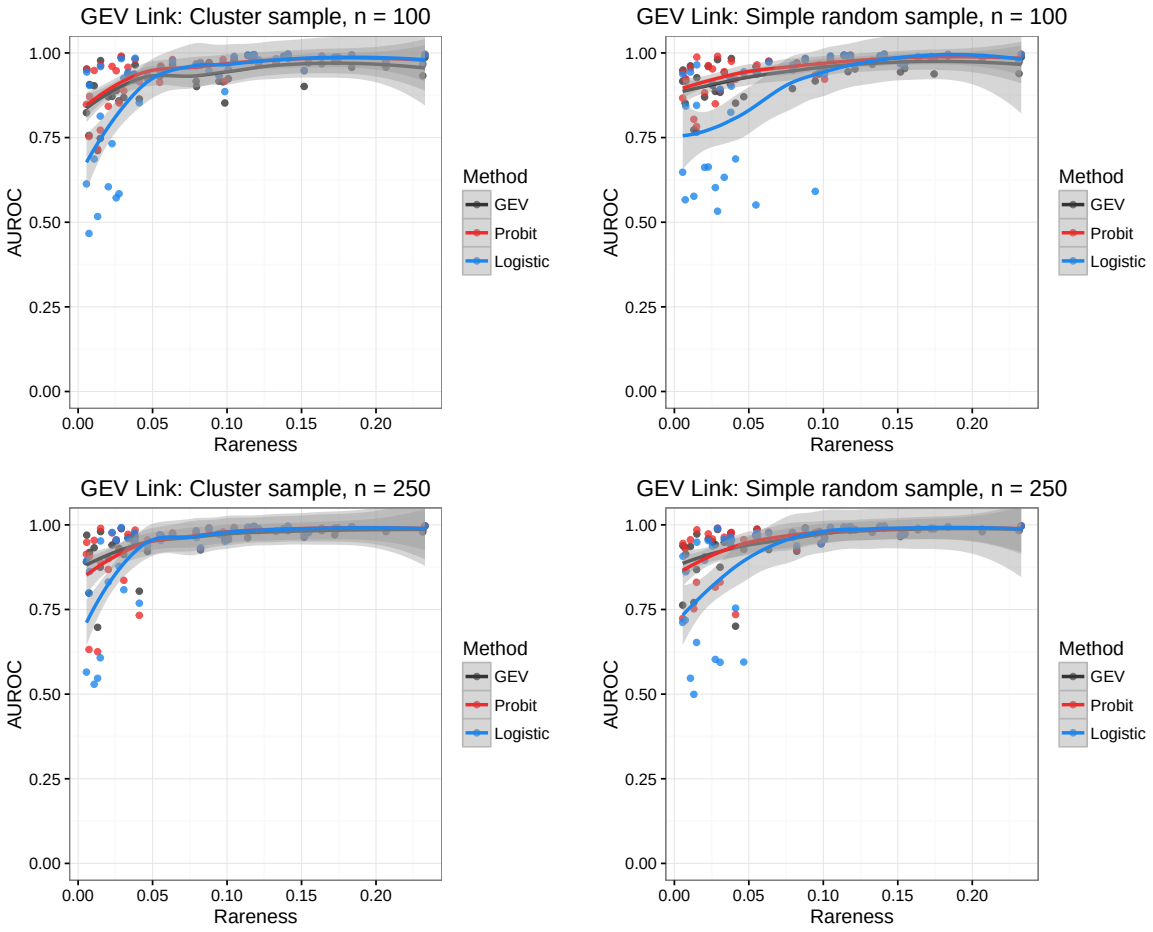

Figure 1: Smooth of AUROC by rareness for each sample technique for the GEV link.

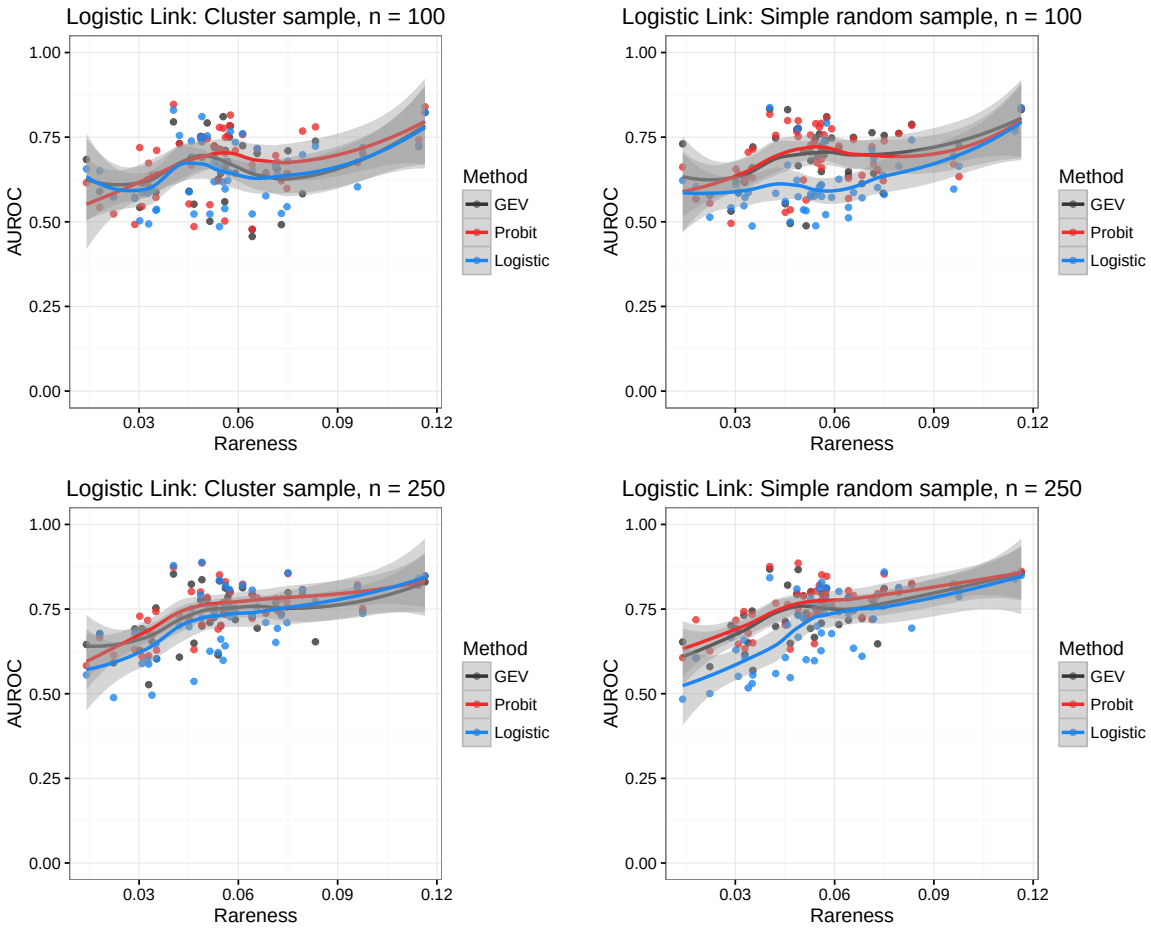

Figure 2: Smooth of AUROC by rareness for each sample technique for the logistic link.

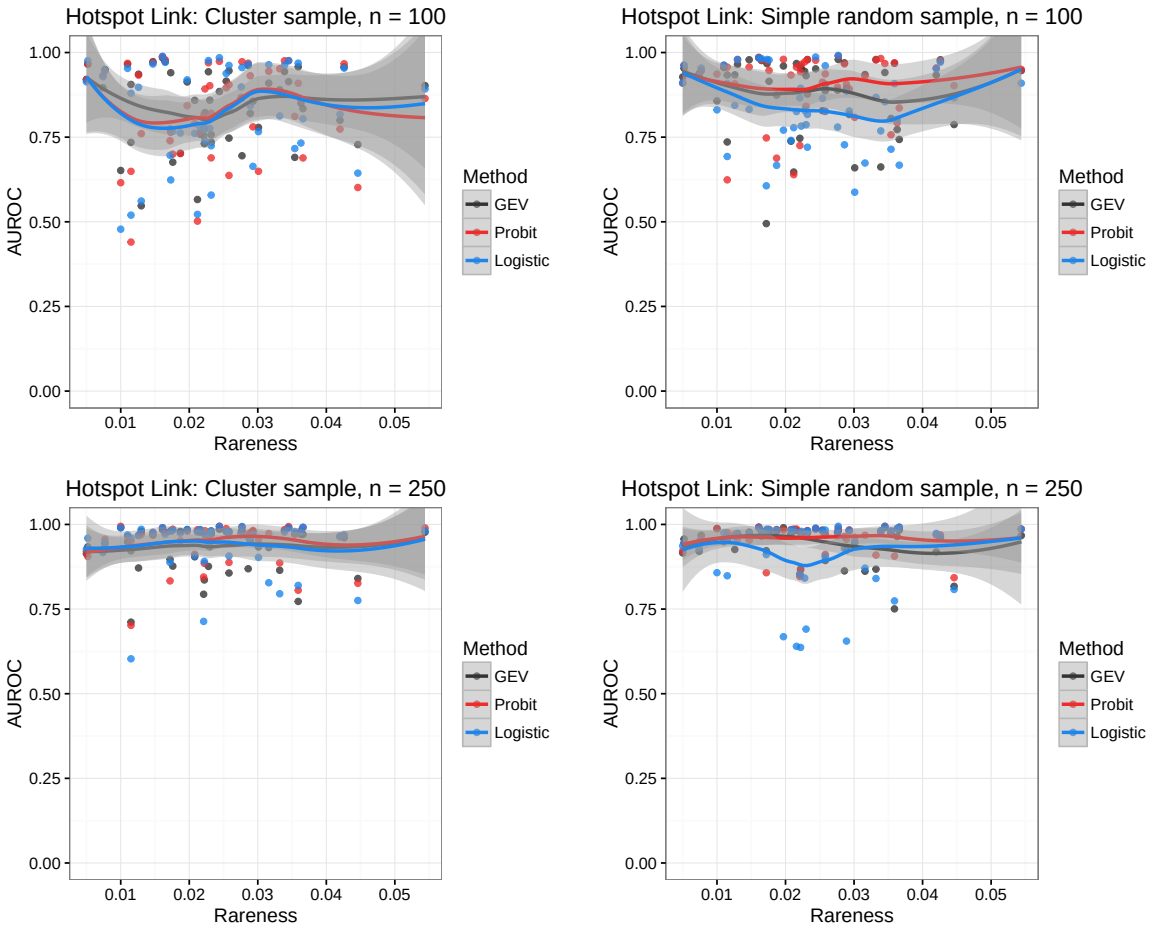

Figure 3: Smooth of AUROC by rareness for each sample technique for the hotspot link.