Appendix B: Exploring Different Smoothing Functions

Figure B1 shows, for Iaqua Buttes, the comparison between two different generalized additive model smoothing function bases, thin plate regression splines and Markovian random fields, as well as a slightly different method of calculating the polygon centroid to incorporate geographical location into the statistical model. Solid lines are associated with parameter estimates and dashed lines show 95% confidence intervals; parameter estimates which are significant at $p < 0.05$ have solid circles and those that are not have open circles. The Y-axis is a standardized regression parameter estimate β, and the X-axis is the cell size in meters. There are no appreciable differences between these methods. Similarly, the two methods of locating a polygon centroid (to extract the geographical coordinates for the statistical model), "inside" vs. "centroid" do not produce appreciably different results.

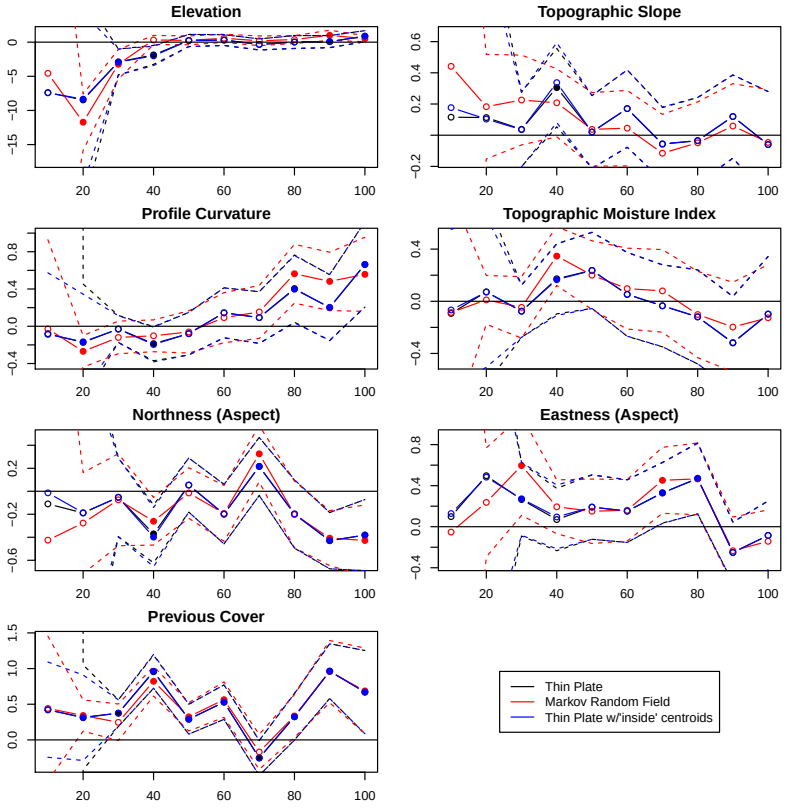

Figure B1: Comparison of smoothing function bases on scaling results for Iaqua Buttes. Thin plate regression spline and Markovian random field bases give similar results for Iaqua Buttes. Also shown: different choice of centroid location ("inside" vs. "centroid") for geographical coordinates, which also gives similar results.