**Interpreting deployment model diagnostic plots**

The diagnostic plots show the relationship between distance from camera and vertical (y-pixel) position in the image, where 0 is the top of the image and 1 is the bottom. Points are the ground positions of the calibration poles, and lines illustrate the model fitted to these points which will be used to predict animal positions. Both lines and points are shaded to reflect horizontal (x-axis) position. Below are examples of good and bad calibrations.

GOOD CALIBRATION EXAMPLES

Plot 1 shows sufficient points and a very tight fit between model and points. There is almost no variation in the x-axis (the model lines are plotted on top of one another), indicating that the camera was perfectly aligned with the ground plane.

Plot 2 does not have perfect alignment (the model lines are separated) – perhaps the camera was upright but the ground sloped, or the camera was skewed – but it is still a good calibration. There are enough points across the range, and the variation across the x-axis (from dark to light shading) is mirrored well between points and lines.

Chart

Description automatically generatedDiagram

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BAD CALIBRATION EXAMPLES

Plot 3 shows a very bad calibration. There are only 3 points, with very little variation across the range, and the model clearly doesn’t have enough consistent information to describe a sensible ground surface.

Plot 4 perhaps shows a sensible model, but there are again very few points across an insufficient range for this to be reliable.

Plot 5 shows a bad calibration that might be saved by checking back for errors in Agouti – there is a sensible-looking fit between model and most points, but there are two outliers, which could be the result of incorrect heights being entered or inaccurate digitisation, and fixing these problems should give a usable model. Alternatively the points could be the result of poles being placed on isolated rocks, down holes, or being digitised while not resting on the ground. This might be fixed by excluding these points (delete the pole digitisations in Agouti). If none of these fixes work and the model fit still seems poor the deployment should not be used in the analysis (say no when prompted when running the analysis in R).

Chart, diagram

Description automatically generated with medium confidenceDiagram

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