

# Multilevel Urban Tree Allometric equations

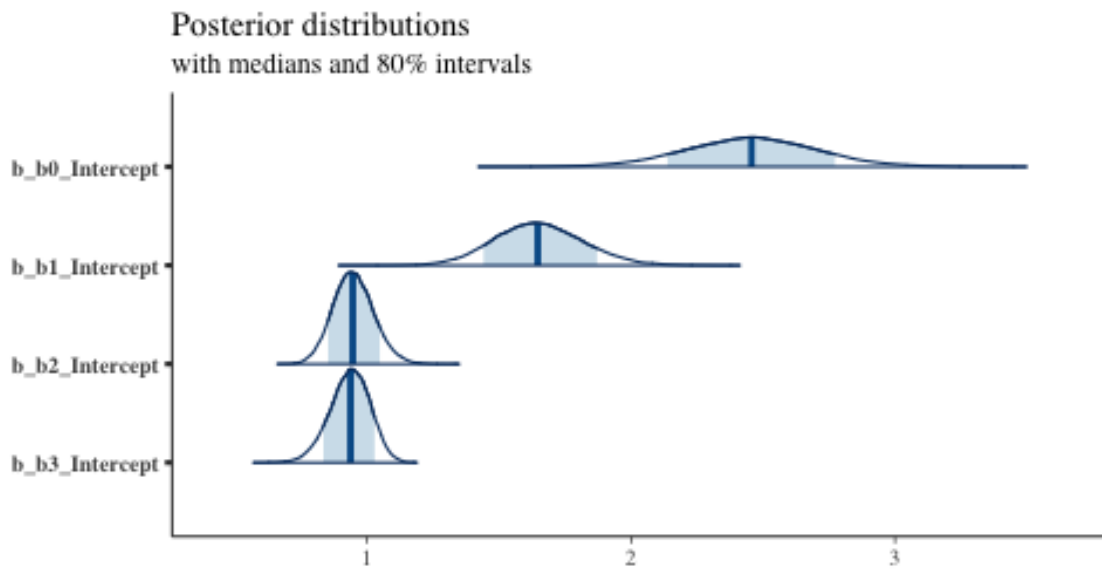
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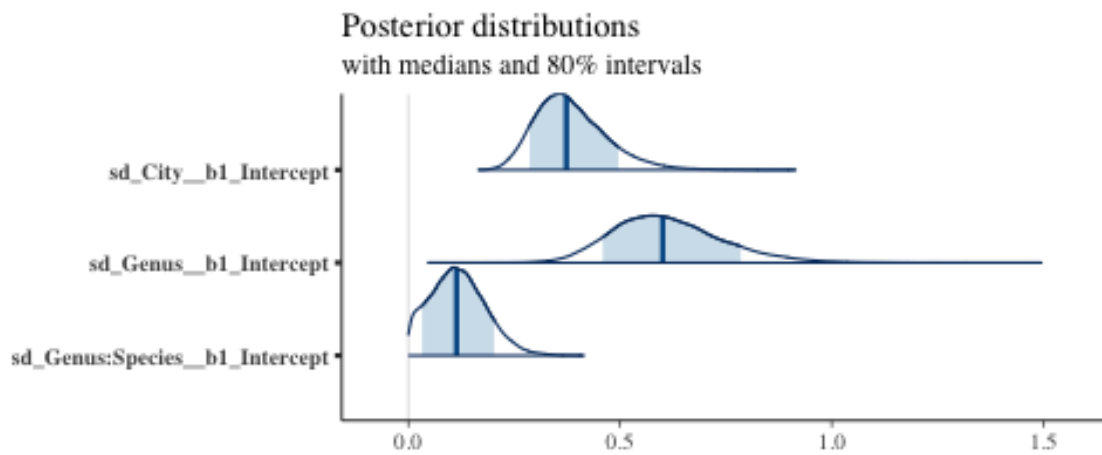
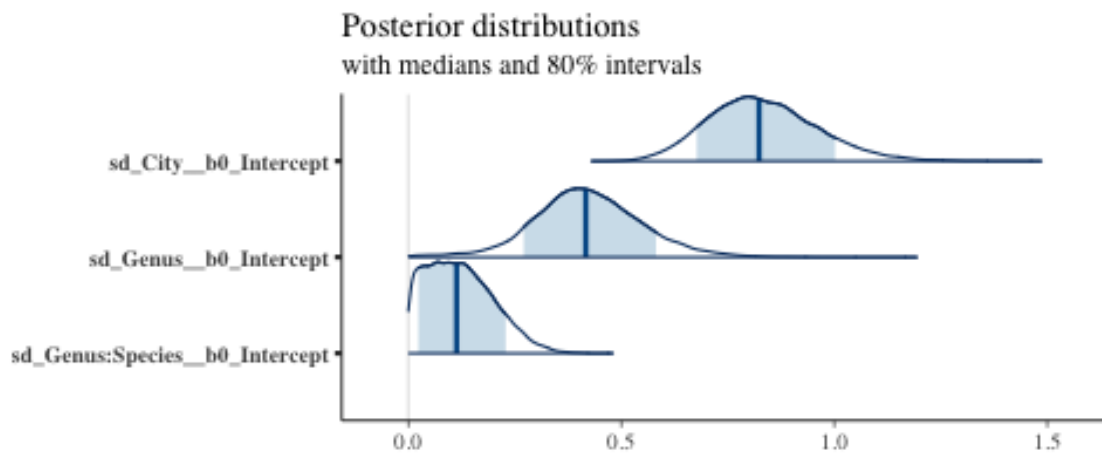
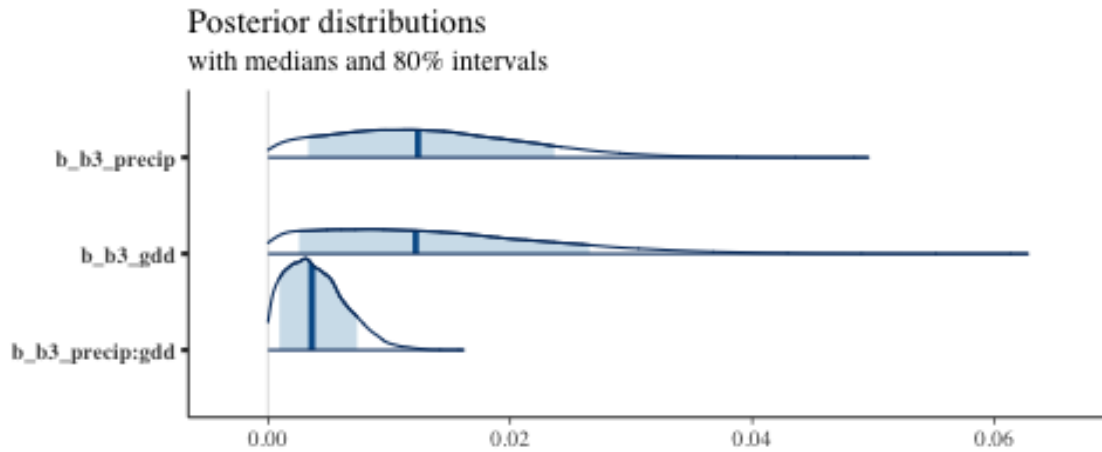
October 26, 2018

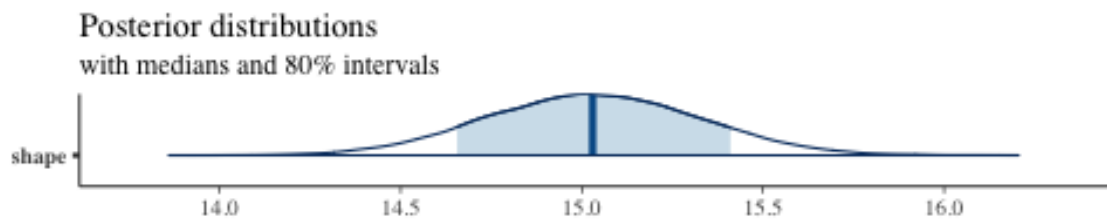
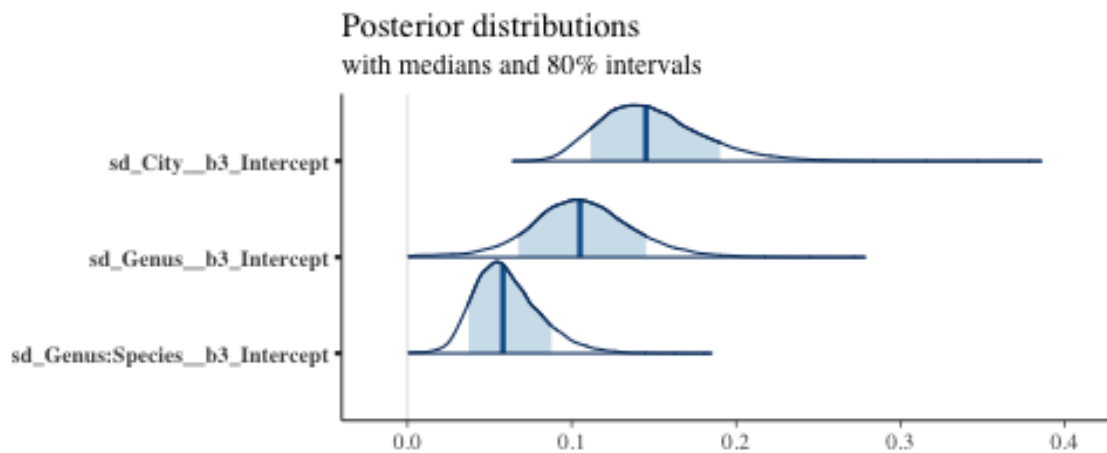
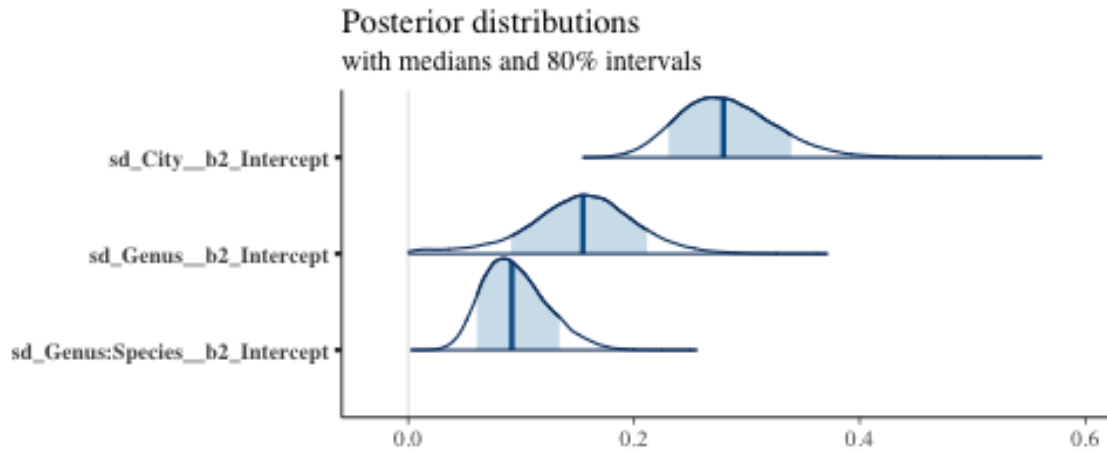
## Results

### parameter estimates

Posterior distributions with 80% interval and median for parameters in

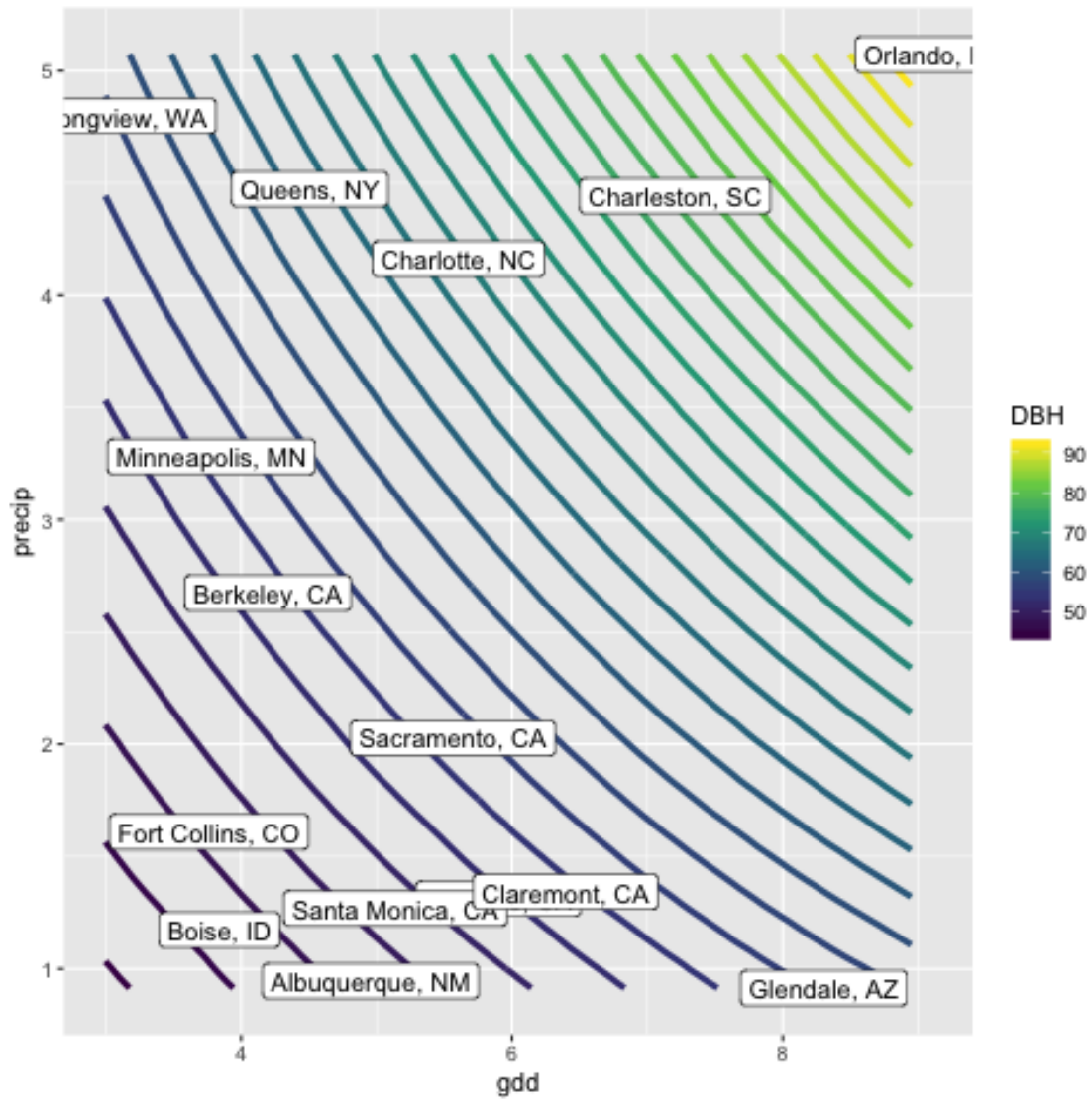






## climate effects

There is a positive effect of growing degree days (gdd) and annual precipitation (precip) on tree diameter (dbh), and a positive interaction between the two. Marginal effects of climate on DBH in . There is an estimated 40cm difference in dbh between an average tree in Orlando, FL and one in Boise, ID.



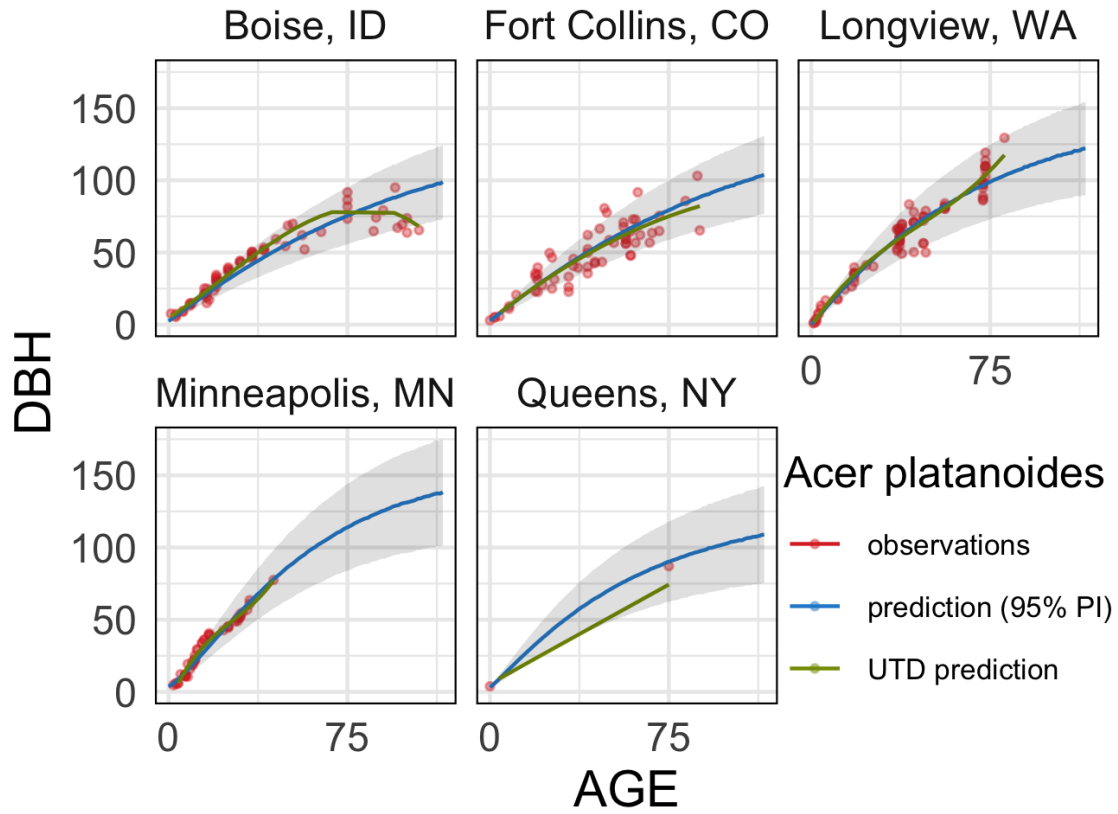


Figure 1: red points are observations, blue lines are predictions of the model and shading indicates 95% prediction interval, green lines show UTD equations

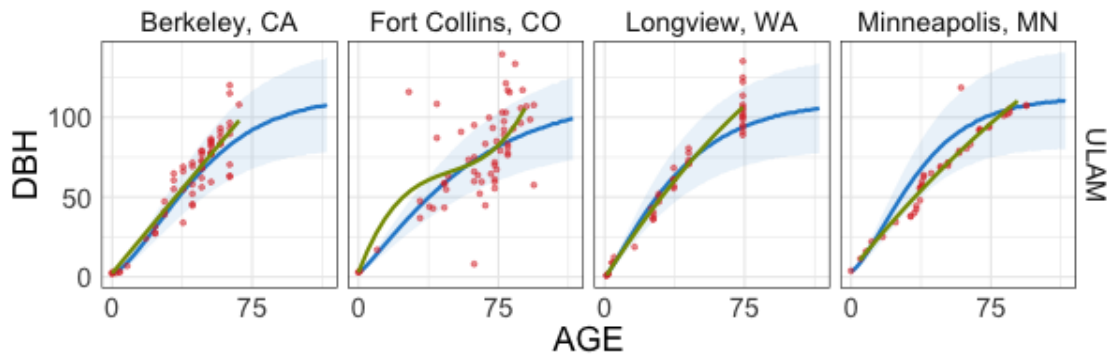


Figure 2: red points are observations, blue lines are predictions of the model and shading indicates 95% prediction interval, green lines show UTD equations

## Comparing to existing equations

illustrative comparisons

Uncertainty increases when predicting out of sample cities, genera, and species

