**Introduction:**

In an observational study the abundance of the bee species *Eulaema nigrita* in the Brazilian Atlantic Forest were observed and where included in a dataset which also showed a number of potential predictor variables including climate (mean annual temperature and precipitation, temperature and precipitation seasonality) and land use. We want to look at the effects of mean annual precipitation, precipitaional seasonality and the land use on the abdundance of bees.

**Methods:**

First of all we looked at our responds varibale Euleam nigrita abundances to get an overview on our data distbution.

IMAGE

The histogram resembles a possion distriubution which lead us to doing a GLM with a poisson distribution.

So we start by doing a regular GLM with family = poisson. This GLM had a number of residual diviance of 17042 on 174 degrees of freedom. Here the overdispersion is serious, and we can not trust the model estimates. In this case, we need an

alternative link function that allows the variance to increase more than the mean. The negative binomial distribution is a good option. The negative binomial is similar to the Poisson distribution, but includes an additional parameter modelling the disproportionate increase in variance with increasing mean.

So we adapted and used a negative binomial GLM and achieved a more trustful model.

TABLE of GLM.NB

The intercept shows uns the estimated log-count when all predictor variables are zero. In this case the estimated log-count is 5.35

**Results:**

**Conclusion:**