Leg Length vs Nest Size Up Step model addition

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Run on 23 August, 2017 at 2017-08-23 17:17:49

Model Addition

- logCtFm + InstarNumber (1 | NestID)

vs

- logCtFm + InstarNumber + (1 | NestID) logCtFm:InstarNumber

SIGNIFICANT

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)	stars
object	5.00	-5182.01	-5156.28	2596.01	-5192.01				
..1	6.00	-5203.19	-5172.31	2607.59	-5215.19	23.17	1.00	0.00	***

- logCtFm + InstarNumber + (1 | NestID) logCtFm:InstarNumber

vs

- logCtFm + InstarNumber + (1 | NestID) + logCtFm:InstarNumber InstarNumber:InstarSex

SIGNIFICANT

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)	stars
object	6.00	-5203.19	-5172.31	2607.59	-5215.19				
..1	7.00	-5228.53	-5192.51	2621.27	-5242.53	27.35	1.00	0.00	***

- logCtFm + InstarNumber + (1 | NestID) + logCtFm:InstarNumber InstarNumber:InstarSex

vs

- logCtFm + InstarNumber + (1 | NestID) + logCtFm:InstarNumber + InstarNumber:InstarSex logCtFm:InstarNumber:InstarSex

**********NOT SIGNIFICANT — STOP HERE **********

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)	stars
object	7.00	-5228.53	-5192.51	2621.27	-5242.53				
..1	8.00	-5229.98	-5188.81	2622.99	-5245.98	3.45	1.00	0.06	.

- logCtFm + InstarNumber + (1 | NestID) + logCtFm:InstarNumber + InstarNumber:InstarSex logCtFm:InstarNumber:InstarSex

vs

- logCtFm + InstarNumber + (1 | NestID) + logCtFm:InstarNumber + InstarNumber:InstarSex + logCtFm:InstarNumber:InstarSex I(logCtFmˆ2)

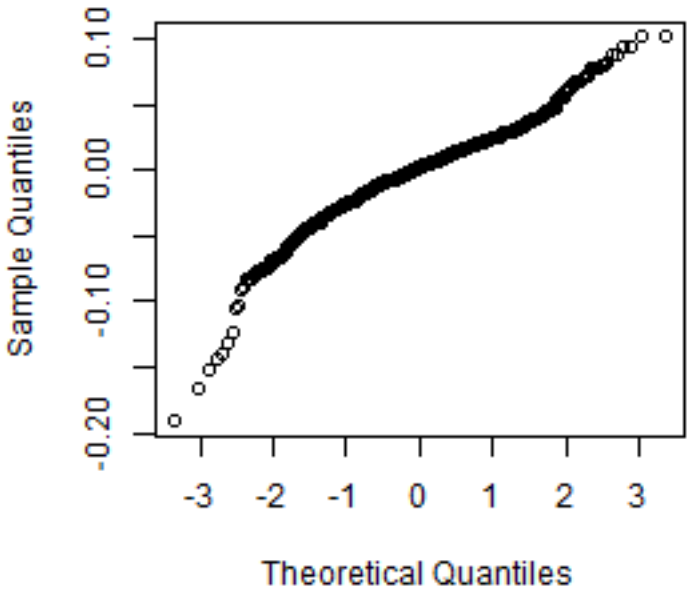
**********NOT SIGNIFICANT — STOP HERE **********

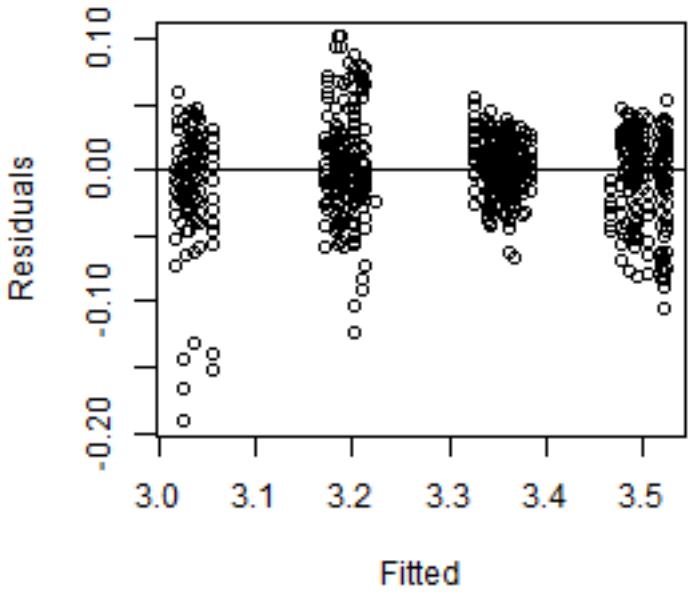
	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)	stars
object	8.00	-5229.98	-5188.81	2622.99	-5245.98				
..1	9.00	-5228.00	-5181.68	2623.00	-5246.00	0.02	1.00	0.89	

Final model is logLeg ~ logCtFm + InstarNumber + logCtFm:InstarNumber + InstarNumber:InstarSex + (1 | NestID)

Checking full model fit

```
log(LegLength)=log(ColonySize) + InstarAge + log(ColonySize):InstarAge + InstarAge:InstarSex + (1|Colony)
```





Graph with full model superimposed

```
Model:
logLeg ~ logCtFm + InstarNumber + logCtFm:InstarNumber + InstarNumber:InstarSex + (1 | NestID)
```

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Note: If line on graph is blue R could not plot the lmer, plotting a simple lm instead[1] "lmer"
```

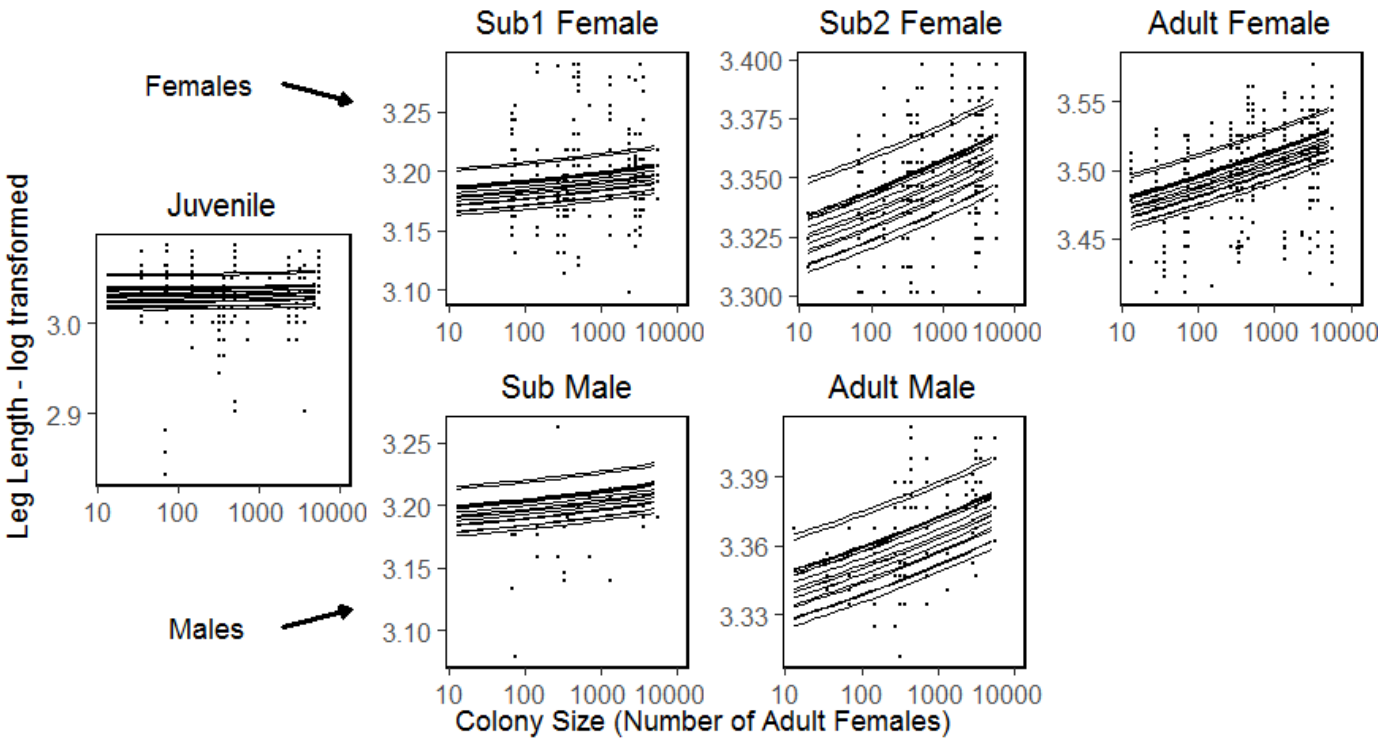

Figure 1: plot of chunk Graph