Model selection of fixed effects for the stem CH4 linear mixed effect model

The symbol \* indicates that interactions between environmental variables are being tested, as well as the environmental variables being tested individually.

1) Original model.

Stem CH4 model 1<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Plantation\*Palm\*WTD\*Soil moisture

+Plantation\*Palm\*Soil temperature

+Mean monthly relative humidity\*Soil moisture

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation\*Palm

+Mean monthly relative humidity\*Air temperature,

random=~1|Plantation/Palm)

2) The interaction between monthly mean relative humidity and soil moisture was dropped.

Stem CH4 model 2<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Plantation\*Palm\*WTD\*Soil moisture

+Plantation\*Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation\*Palm

+Mean monthly relative humidity\*Air temperature,

random=~1|Plantation/Palm)

3) The interaction between air temperature, plantation and palm was dropped.

Stem CH4 model 3<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Plantation\*Palm\*WTD\*Soil moisture

+Plantation\*Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Palm

+Air temperature\*Plantation

+Mean monthly relative humidity\*Air temperature,

random=~1|Plantation/Palm)

4) The interaction between monthly relative humidity and air temperature was dropped.

Stem CH4 model 4<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Plantation\*Palm\*WTD\*Soil moisture

+Plantation\*Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Palm

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

5) The interaction between air temperature and palm was dropped.

Stem CH4 model 5<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Plantation\*Palm\*WTD\*Soil moisture

+Plantation\*Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

6) The interaction between plantation, palm and soil temperature was dropped.

Stem CH4 model 6<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Plantation\*Palm\*WTD\*Soil moisture

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

7) The interaction between plantation, palm and soil temperature was dropped.

Stem CH4 model 7<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD\*Soil moisture

+Plantation\*WTD\*Soil moisture

+Plantation\*Palm\*Soil moisture

+Plantation\*Palm\*WTD

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

8) The interaction between plantation, palm and WTD was dropped.

Stem CH4 model 8<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD\*Soil moisture

+Plantation\*WTD\*Soil moisture

+Plantation\*Palm\*Soil moisture

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

9) The interaction between palm, WTD and soil moisture was dropped.

Stem CH4 model 9<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD

+Plantation\*WTD\*Soil moisture

+Plantation\*Palm\*Soil moisture

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

10) The interaction between plantation, WTD and soil moisture was dropped.

Stem CH4 model 10<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD

+WTD\*Soil moisture

+Plantation\*WTD

+Plantation\*Palm\*Soil moisture

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

11) The interaction between WTD and soil moisture was dropped.

Stem CH4 model 11<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD

+Plantation\*WTD

+Plantation\*Palm\*Soil moisture

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

12) The interaction between plantation and WTD was dropped.

Stem CH4 model 12<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD

+Plantation\*Palm\*Soil moisture

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*WTD

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

13) The interaction between monthly relative humidity and WTD was dropped.

Stem CH4 model 13<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD

+Plantation\*Palm\*Soil moisture

+Plantation\*Soil temperature

+Palm\*Soil temperature

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

14) The interaction between plantation and soil temperature was dropped.

Stem CH4 model 14<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+Palm\*WTD

+Plantation\*Palm\*Soil moisture

+Palm\*Soil temperature

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

15) The interaction between palm and WTD was dropped.

Stem CH4 model 15<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+WTD

+Plantation\*Palm\*Soil moisture

+Palm\*Soil temperature

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)

16) The interaction between palm and soil temperature was dropped.

Stem CH4 model 16<-lme(CH4~Mean monthly relative humidity\*Plantation\*Palm

+WTD

+Plantation\*Palm\*Soil moisture

+Mean monthly relative humidity\*Soil temperature

+Air temperature\*Plantation,

random=~1|Plantation/Palm)