

title '1 VkillH and HkillV often, 37degree model, remove nesting in HkillV, VkillH';
title2 'based on Bolker et al, TREE use LaPlace likelihood approx and based on Steve Dunham, ddfm=bw';

```
Proc glimmix data=companalysis method=laplace;  
where Vert ne Horiz;  
class Temp Horiz Vert VkillH_often HkillV_often VkillH_any HkillV_any;  
model Out_V (event='1') = VkillH_often HkillV_often VkillH_often*HkillV_often/ ddfm=bw link=logit  
dist=binary;  
*random Vert(VkillH_often) Horiz(HkillV_often);  
random Horiz Vert;  
covtest / wald;  
lsmeans VkillH_often HkillV_often VkillH_often*HkillV_often / pdiff OR adjust=tukey ilink CL;  
*lsmeans VkillH_any HkillV_any VkillH_any*HkillV_any / pdiff OR adjust=tukey ilink CL;  
nloptions tech=nrridg maxiter=500;  
run;
```

title '2 VkillH and HkillV often, 37degree model, remove nesting in HkillV, VkillH REDUCED model 1 TO TEST VERT';

title2 'based on Bolker et al, TREE use LaPlace likelihood approx and based on Steve Dunham, ddfm=bw';

```
Proc glimmix data=companalysis method=laplace;  
where Vert ne Horiz;  
class Temp Horiz Vert VkillH_often HkillV_often VkillH_any HkillV_any;  
model Out_V (event='1') = VkillH_often HkillV_often VkillH_often*HkillV_often/ ddfm=bw link=logit  
dist=binary;  
*random Vert(VkillH_often) Horiz(HkillV_often);  
random Horiz;  
covtest / wald;  
lsmeans VkillH_often HkillV_often VkillH_often*HkillV_often / pdiff OR adjust=tukey ilink CL;  
*lsmeans VkillH_any HkillV_any VkillH_any*HkillV_any / pdiff OR adjust=tukey ilink CL;  
nloptions tech=nrridg maxiter=500;  
run;
```

title '3 VkillH and HkillV often, 37 degree model, remove nesting in HkillV, VkillH REDUCED model 2 TO TEST HORIZ';

title2 'based on Bolker et al, TREE use LaPlace likelihood approx and based on Steve Dunham, ddfm=bw';

```
Proc glimmix data=companalysis method=laplace;  
where Vert ne Horiz;  
class Temp Horiz Vert VkillH_often HkillV_often VkillH_any HkillV_any;  
model Out_V (event='1') = VkillH_often HkillV_often VkillH_often*HkillV_often/ ddfm=bw link=logit  
dist=binary;  
*random Vert(VkillH_often) Horiz(HkillV_often);  
random VERT;  
covtest / wald;  
lsmeans VkillH_often HkillV_often VkillH_often*HkillV_often / pdiff OR adjust=tukey ilink CL;  
*lsmeans VkillH_any HkillV_any VkillH_any*HkillV_any / pdiff OR adjust=tukey ilink CL;  
nloptions tech=nrridg maxiter=500;  
run;
```