```
TITLE 'FATORIAL 3 FATORES';data verdao;input Trat A  B C   Rep   Resp;
cards;
1     1     1     1     1     11
1     1     1     1     2     10
1     1     1     1     3     9
2     1     1     2     1     10
2     1     1     2     2     11
2     1     1     2     3     12
3     1     2     1     1     13
3     1     2     1     2     12
3     1     2     1     3     11
4     1     2     2     1     11
4     1     2     2     2     10
4     1     2     2     3     9
5     2     1     1     1     5
5     2     1     1     2     6
5     2     1     1     3     7
6     2     1     2     1     5
6     2     1     2     2     4
6     2     1     2     3     3
7     2     2     1     1     4
7     2     2     1     2     5
7     2     2     1     3     6
8     2     2     2     1     6
8     2     2     2     2     6
8     2     2     2     3     7
9     3     1     1     1     9
9     3     1     1     2     10
9     3     1     1     3     11
10    3     1     2     1     11
10    3     1     2     2     10
10    3     1     2     3     9
11    3     2     1     1     21
11    3     2     1     2     20
11    3     2     1     3     19
12    3     2     2     1     19
12    3     2     2     2     20
12    3     2     2     3     21
;
proc print; run;
proc glm;
class Trat  A     B     C     Rep;
model Resp = A | B|C;
random A|B| C;
run;

proc glm;
class Trat  A     B     C     Rep;
model Resp = A | B|C;
random A|B| C;
random B C A*B A*C B*C A*B*C/test;
run;
```

```
*misto A fixo, B,C e interações aleatórias;
proc mixed;
class       A     B     C     Rep;
model resp= A;
random B C A*B A*C B*C A*B*C/solution;
run;
proc mixed;
class       A     B     C     Rep;
model resp= A/ddfm=Satterthwaite;
random B C A*B A*C B*C A*B*C/solution;
lsmeans A/adjust=tukey;
run;
```

Source	Type III Expected Mean Square
A	Var(Error) + 3 Var(A*B*C) + 6 Var(A*C) + 6 Var(A*B) + 12 Var(A)
B	Var(Error) + 3 Var(A*B*C) + 9 Var(B*C) + 6 Var(A*B) + 18 Var(B)
A*B	Var(Error) + 3 Var(A*B*C) + 6 Var(A*B)
C	Var(Error) + 3 Var(A*B*C) + 9 Var(B*C) + 6 Var(A*C) + 18 Var(C)
A*C	Var(Error) + 3 Var(A*B*C) + 6 Var(A*C)
B*C	Var(Error) + 3 Var(A*B*C) + 9 Var(B*C)
A*B*C	Var(Error) + 3 Var(A*B*C)