Exemplos de planos

1 – 16 experimentos – 10 fatores – fornecimento de tabelas de aliases até interação de terceira ordem – DEFAULT – ORDEM ALEATORIZADO

```
> k <-FrF2(16, 10,alias.info = 3)
> summary(k)
Call:
FrF2(16, 10, alias.info = 3)

Experimental design of type  FrF2
16  runs

Factor settings (scale ends):
  A  B  C  D  E  F  G  H  J  K
1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
2  1  1  1  1  1  1  1  1  1  1

Design generating information:
$legend
 [1] A=A B=B C=C D=D E=E F=F G=G H=H J=J K=K

$generators
[1] E=AB   F=AC   G=BC   H=AD   J=BCD  K=ABCD


Alias structure:
$main
 [1] A=BE=CF=DH=JK=BFG=CEG=DGK=GHJ
 [2] B=AE=CG=AFG=CDJ=CEF=CHK=DEH=DFK=EJK=FHJ
 [3] C=AF=BG=AEG=BDJ=BEF=BHK=DEK=DFH=EHJ=FJK
 [4] D=AH=GJ=AGK=BCJ=BEH=BFK=CEK=CFH=EFJ=HJK
 [5] E=AB=FG=ACG=BCF=BDH=BJK=CDK=CHJ=DFJ=FHK
 [6] F=AC=EG=ABG=BCE=BDK=BHJ=CDH=CJK=DEJ=EHK
 [7] G=BC=DJ=EF=HK=ABF=ACE=ADK=AHJ
 [8] H=AD=GK=AGJ=BCK=BDE=BFJ=CDF=CEJ=DJK=EFK
 [9] J=AK=DG=AGH=BCD=BEK=BFH=CEH=CFK=DEF=DHK
[10] K=AJ=GH=ADG=BCH=BDF=BEJ=CDE=CFJ=DHJ=EFH

$fi2
[1] AG=BF=CE=DK=HJ=ABC=ADJ=AEF=AHK=BEG=CFG=DGH=GJK
[2] BD=CJ=EH=FK=ABH=ACK=ADE=AFJ=BGJ=CDG=EGK=FGH
[3] BH=CK=DE=FJ=ABD=ACJ=AEH=AFK=BGK=CGH=DFG=EGJ
[4] BJ=CD=EK=FH=ABK=ACH=ADF=AEJ=BDG=CGJ=EGH=FGK
[5] BK=CH=DF=EJ=ABJ=ACD=AEK=AFH=BGH=CGK=DEG=FGJ

$fi3
```

[1] ABE=ACF=ADH=AJK=BCG=DGJ=EFG=GHK

The design itself:

	A	B	C	D	E	F	G	H	J	K
1	-1	1	-1	-1	-1	1	-1	1	1	-1
2	1	-1	1	1	-1	1	-1	1	-1	-1
3	-1	-1	-1	-1	1	1	1	1	-1	1
4	-1	1	1	-1	-1	-1	1	1	-1	1
5	-1	-1	1	1	1	-1	-1	-1	-1	1
6	1	1	1	1	1	1	1	1	1	1
7	1	1	-1	-1	1	-1	-1	-1	1	1
8	1	-1	-1	-1	-1	-1	1	-1	-1	-1
9	-1	1	-1	1	-1	1	-1	-1	-1	1
10	1	-1	-1	1	-1	-1	1	1	1	1
11	-1	-1	1	-1	1	-1	-1	1	1	-1
12	1	1	1	-1	1	1	1	-1	-1	-1
13	-1	1	1	1	-1	-1	1	-1	1	-1
14	1	1	-1	1	1	-1	-1	1	-1	-1
15	-1	-1	-1	1	1	1	1	-1	1	-1
16	1	-1	1	-1	-1	1	-1	-1	1	1

class=design, type= FrF2

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2 – Experimento com 16, com gerator ABC

```
k <-FrF2(16, generators="ABC")
> summary(k)
Call:
FrF2(16, generators = "ABC")

Experimental design of type  FrF2.generators
16  runs

Factor settings (scale ends):
  A  B  C  D  E
1 -1 -1 -1 -1 -1
2  1  1  1  1  1

Design generating information:
$legend
[1] A=A B=B C=C D=D E=E

$generators
[1] E=ABC
```

Alias structure:
$fi2
[1] AB=CE AC=BE AE=BC

The design itself:

	A	B	C	D	E
1	1	1	1	-1	1
2	-1	1	1	1	-1
3	-1	-1	-1	1	-1
4	1	-1	-1	1	1
5	1	-1	1	1	-1
6	-1	-1	1	1	1
7	-1	1	-1	1	1
8	1	-1	-1	-1	1
9	-1	-1	1	-1	1
10	1	1	1	1	1
11	1	-1	1	-1	-1
12	-1	1	1	-1	-1
13	-1	1	-1	-1	1
14	-1	-1	-1	-1	-1
15	1	1	-1	-1	-1
16	1	1	-1	1	-1

class=design, type= FrF2.generators

++

2a) = IDEM AO 2, porém pedido para colocar os aliases até a interação de terceira ordem

k <-FrF2(16, generators="ABC", alias.info = 3)
> summary(k)
Call:
FrF2(16, generators = "ABC", alias.info = 3)

Experimental design of type FrF2.generators
16 runs

Factor settings (scale ends):

	A	B	C	D	E
1	-1	-1	-1	-1	-1
2	1	1	1	1	1

Design generating information:
$legend
[1] A=A B=B C=C D=D E=E

$generators

[1] E=ABC

Alias structure:
$main
[1] A=BCE B=ACE C=ABE E=ABC

$fi2
[1] AB=CE AC=BE AE=BC

$fi3
[1] ABD=CDE ACD=BDE ADE=BCD

The design itself:

	A	B	C	D	E
1	1	-1	-1	-1	1
2	-1	-1	1	-1	1
3	-1	-1	1	1	1
4	-1	1	1	1	-1
5	1	1	-1	1	-1
6	-1	1	-1	-1	1
7	1	-1	-1	1	1
8	1	1	-1	-1	-1
9	-1	1	-1	1	1
10	-1	1	1	-1	-1
11	1	1	1	1	1
12	1	-1	1	-1	-1
13	1	1	1	-1	1
14	-1	-1	-1	-1	-1
15	-1	-1	-1	1	-1
16	1	-1	1	1	-1

class=design, type= FrF2.generators

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3) Plano com 10 fatores com resolution 4 e matriz de aliases até a terceira ordem

k <-FrF2(nfactors=10,resolution=4, alias.info = 3)
> summary(k)
Call:
FrF2(nfactors = 10, resolution = 4, alias.info = 3)

Experimental design of type FrF2
32 runs

Factor settings (scale ends):

	A	B	C	D	E	F	G	H	J	K
1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

2 1 1 1 1 1 1 1 1 1 1

Design generating information:
$legend
[1] A=A B=B C=C D=D E=E F=F G=G H=H J=J K=K

$generators
[1] F=ABC G=ABD H=ABE J=ACDE K=BCDE

Alias structure:
$main
[1] A=BCF=BDG=BEH=BJK B=ACF=ADG=AEH=AJK C=ABF=DFG=EFH=FJK
D=ABG=CFG=EGH=GJK
[5] E=ABH=CFH=DGH=HJK F=ABC=CDG=CEH=CJK G=ABD=CDF=DEH=DJK
H=ABE=CEF=DEG=EJK
[9] J=ABK=CFK=DGK=EHK K=ABJ=CFJ=DGJ=EHJ

$fi2
[1] AB=CF=DG=EH=JK AC=BF=DEJ=DHK=EGK=GHJ AD=BG=CEJ=CHK=EFK=FHJ
[4] AE=BH=CDJ=CGK=DFK=FGJ AF=BC=DEK=DHJ=EGJ=GHK AG=BD=CEK=CHJ=EFJ=FHK
[7] AH=BE=CDK=CGJ=DFJ=FGK AJ=BK=CDE=CGH=DFH=EFG AK=BJ=CDH=CEG=DEF=FGH
[10] CD=FG=AEJ=AHK=BEK=BHJ CE=FH=ADJ=AGK=BDK=BGJ CG=DF=AEK=AHJ=BEJ=BHK
[13] CH=EF=ADK=AGJ=BDJ=BGK CJ=FK=ADE=AGH=BDH=BEG
CK=FJ=ADH=AEG=BDE=BGH
[16] DE=GH=ACJ=AFK=BCK=BFJ DH=EG=ACK=AFJ=BCJ=BFK DJ=GK=ACE=AFH=BCH=BEF
[19] DK=GJ=ACH=AEF=BCE=BFH EJ=HK=ACD=AFG=BCG=BDF
EK=HJ=ACG=ADF=BCD=BFG

The design itself:

	A	B	C	D	E	F	G	H	J	K
1	1	-1	1	1	-1	-1	-1	1	-1	1
2	-1	-1	-1	-1	1	-1	-1	1	-1	-1
3	-1	1	-1	1	-1	1	-1	1	-1	1
4	1	-1	1	-1	1	-1	1	-1	-1	1
5	1	1	-1	-1	-1	-1	-1	-1	-1	-1
6	1	-1	-1	-1	-1	1	1	1	-1	1
7	-1	1	1	1	1	-1	-1	-1	-1	1
8	1	1	1	-1	-1	1	-1	-1	1	1
9	-1	-1	-1	1	1	-1	1	1	1	1
10	-1	1	-1	-1	1	1	1	-1	-1	1
11	-1	1	-1	1	1	1	-1	-1	1	-1
12	1	-1	-1	1	1	1	-1	-1	-1	1
13	1	1	-1	1	-1	-1	1	-1	1	1
14	1	-1	1	1	1	-1	-1	-1	1	-1
15	1	1	-1	1	1	-1	1	1	-1	-1

16 -1 1 1 1 -1 -1 -1 1 1 -1
17 -1 -1 -1 1 -1 -1 1 -1 -1 -1
18 -1 -1 1 1 1 1 1 1 -1 -1
19 -1 1 1 -1 -1 -1 1 1 -1 1
20 1 -1 -1 1 -1 1 -1 1 1 -1
21 1 -1 1 -1 -1 -1 1 1 1 -1
22 1 1 1 1 1 1 1 1 1 1
23 -1 -1 1 -1 1 1 -1 1 1 1
24 -1 1 -1 -1 -1 1 1 1 1 -1
25 -1 -1 1 1 -1 1 1 -1 1 1
26 1 -1 -1 -1 1 1 1 -1 1 -1
27 1 1 1 -1 1 1 -1 1 -1 -1
28 1 1 1 1 -1 1 1 -1 -1 -1
29 -1 1 1 -1 1 -1 1 -1 1 -1
30 -1 -1 1 -1 -1 1 -1 -1 -1 -1
31 1 1 -1 -1 1 -1 -1 1 1 1
32 -1 -1 -1 -1 -1 -1 -1 -1 1 1
class=design, type= FrF2

Idem, porém com resolução 5

```
k <-FrF2(nfactors=10,resolution=5, alias.info = 3)
> summary(k)
Call:
FrF2(nfactors = 10, resolution = 5, alias.info = 3)

Experimental design of type  FrF2
128  runs

Factor settings (scale ends):
  A  B  C  D  E  F  G  H  J  K
1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
2  1  1  1  1  1  1  1  1  1  1

Design generating information:
$legend
 [1] A=A B=B C=C D=D E=E F=F G=G H=H J=J K=K

$generators
[1] H=ABCDE J=ABCFG K=ABDF


Alias structure:
$fi2
 [1] AB=DFK    AD=BFK    AF=BDK    AK=BDF    BD=AFK    BF=ADK    BK=ADF
 [8] CD=GJK    CE=FHK    CF=EHK    CG=DJK    CH=EFK    CJ=DGK    CK=DGJ=EFH
[15] DF=ABK    DG=CJK    DJ=CGK    DK=ABF=CGJ EF=CHK    EH=CFK    EK=CFH
```

[22] FH=CEK FK=ABD=CEH GJ=CDK GK=CDJ HK=CEF JK=CDG

$fi3
[1] ABC=DEH=FGJ ABE=CDH ABG=CFJ ABH=CDE ABJ=CFG ACD=BEH
[7] ACE=BDH ACF=BGJ ACG=BFJ ACH=BDE ACJ=BFG ADE=BCH
[13] ADH=BCE AEH=BCD AFG=BCJ AFJ=BCG AGJ=BCF DEF=GHJ
[19] DEG=FHJ DEJ=FGH DFG=EHJ DFH=EGJ DFJ=EGH DGH=EFJ
[25] DHJ=EFG