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## Data format `list_inst`

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### Summarized:

The data structure `list_inst` gathers the related information with the temporal discretization of a computation. The data structure `list_inst` is produced by the command `DEFI_LIST_INST`.

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## 1 the data structure in some keys

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the data structure `list_inst` contain information relating to the management of the list of times: list of computation moments, procedures in the event of failure of computation (under-cutting...), method of calculating of time step automatic. This data structure is produced by the command `DEFI_LIST_INST`.

## 2 Tree structures

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`list_inst (K8):: =record`

(O)	``.LISTE.DITR`` :	OJB	S	V	R8
(O)	``.LISTE.INFOR`` :	OJB	S	V	R8
(O)	``.ECHE.EVENR`` :	OJB	S	V	R8
(O)	``.ECHE.EVENK`` :	OJB	S	V	K16
(O)	``.ECHE.SUBDR`` :	OJB	S	V	R8
(F)	``.ADAP.EVENR`` :	OJB	S	V	R8
(F)	``.ADAP.EVENK`` :	OJB	S	V	K16
(F)	``.ADAP.TPLUR`` :	OJB	S	V	R8
(F)	``.ADAP.TPLUK`` :	OJB	S	V	K16

## 3 Contained Objects

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### 3.1 JEVEUX objects concerning the management of the list of times

(O) ``.LISTE.DITR`` : OJB S V R8 LONG=NBINST

Lists times of computation.

(O) ``.LISTE.INFOR`` : OJB S V R8 LONG=11

Vector of realities length 11 which contains information on the management of the list of times.

V (1) – Contents of key word `METHODE` of `DEFI_LIST_INST/DEFI_LISTE`

=1 if `METHODE`=' MANUEL '

=2 if `METHODE`=' AUTO '

V (2) – Contained key word `PAS_MINI` of `DEFI_LIST_INST/DEFI_LISTE`

If `PAS_MINI` is not indicated, V (2) `R8PREM` is worth, or a particular value for method `IMPL-EX`.

V (3) – Contained key word `PAS_MAXI` of `DEFI_LIST_INST/DEFI_LISTE`

If `PAS_MAXI` is not indicated, V (3) is worth  $t_{fin} - t_{ini}$  where  $t_{fin}$   $t_{ini}$  is the last and first values of object `.LISTE.DITR`

V (4) – Contained key word `NB_PAS_MAXI` of `DEFI_LIST_INST/DEFI_LISTE`

If `NB_PAS_MAXI` is not indicated, V (4) is worth `NB_PAS_MAXI / PAS_MINI`

V (5) – Contains smallest time step of list `.LISTE.DITR`

V (6) – Previous value: of the increment of time (for management `AUTO` of the list of times)

V (7) – So at least an action of cutting was defined

V (8) – Many times of the list times `NBINST`

V (9) – Many causes of failures `NECHEC`

V (10) – Many methods of automatic adaptation of time step the `NADAPT`

V (11) – So at least an action of reactualization of the preconditioner was defined

## 3.2 Objects concerning the management of the failures

(O) ".ECHE.EVENR" : OJB S V R8 LONG=6\*NECHEC

Vector of realities length 6 X NECHEC, where NECHEC is the number of causes of failure. It contains information on the management of the causes of failures

For each cause of failures:

V (1) – Name of the cause of failure – EVENEMENT

- =0 for "V WANDERS
- "=1 for "DELTA\_GRANDEUR
- "=2 for "COLLISION
- "=3 for "INTERPENETRATION
- "=4 for "DIVE\_RESI
- "=5 for "INSTABILITY

" (2) – Name of the action to carry out – ACTION

- =0 for "ARRET"
- =1 for "DECOUPE"
- =2 for "ITER\_SUPPL"
- =3 for "AUTRE\_PILOTAGE"
- = 4 for "ADAPT\_COEF\_PENA"
- = 5 for "CONTINUE "

V (3) – Flag if the event is started. Is useful in the algorithm.

- =0 for EVENEMENT not started
- =1 for EVENEMENT started

V (4) – Not used

V (5) – Value of reference VALE\_REF for "DELTA\_GRANDEUR"

V (6) – Value of maximum interpenetration PENE\_MAXI

(O) ".ECHE.EVENK" : OJB S V K16 LONG=3\*NECHEC

Vector of character strings length 3 X NECHEC, where NECHEC is the number of causes of failure. It contains information on the management of the causes of failures

For each cause of failures:

V (1) – Name of field NOM\_CHAM for "DELTA\_GRANDEUR"

V (2) – Name of component NOM\_CMP for "DELTA\_GRANDEUR"

V (3) – Comparison criterion CRIT\_COMP for "DELTA\_GRANDEUR"  
GT, GE, LT, LE

(O) ".ECHE.SUBDR" : OJB S V R8 LONG=10\*NECHEC

Vector of realities length 10 X NECHEC, where NECHEC is the number of causes of failure. It contains information on the management of the action in the event of failure

For each cause of failures:

V (1) – Method of under-cutting of time step

- the =0 for "AUCUNE"
- =1 for "MANUEL"
- =2 for "AUTO"

V (2) – Value of "SUBD\_PAS"

V (3) – Value of "SUBD\_PAS\_MINI"

V (4) – Value of "SUBD\_NIVEAU"

V (5) – Value of "SUBD\_INST"

V (6) – Value of "SUBD\_DUREE"

V (7) – Value of "PCENT\_ITER\_PLUS"

V (8) – Value of "COEF\_MAXI"

V (9) – Value of "SUBD\_RATIO"

V (10) – Value of "SUBD\_METHODE\_AUTO"  
=1 for "COLLISION"  
=2 for "EXTRAPOLATES "

### 3.3 Objects concerning the management of the adaptation

(F) ".ADAP.EVENR" : OJB S V R8 LONG=6\*NADAPT

Vector of realities length 6 X NADAPT, where NADAPT is the number of causes of adaptation. It time step contains information on the management of the causes of adaptation of following.

For each cause of adaptation:

V (1) – Name of the cause of adaptation (event)

=0 for "AUCUN"  
=1 for "TOUT\_INST"  
=2 for "SEUIL" without formula  
=3 for "SEUIL" with formula

V (2) – Value of "NB\_INCR\_SEUIL"

V (3) – Value of "NOM\_PARA"

=1 for "ITER\_NEWTON"

V (4) – Value of "CRIT\_COMP"

=1 for "LT"  
=2 for "GT"  
=3 for "LE"  
=4 for "GE"

V (5) – Value of value of reference "VALE"

V (6) – Many times where computation was a success (without release of an event )

(F) ".ADAP.EVENK" : OJB S V K16 LONG= NADAPT

Vector of realities length NADAPT, where NADAPT is the number of causes of adaptation. It time step contains information on the management of the causes of adaptation of following.

For each cause of adaptation:

V (1) – Name of the formula for "SEUIL" with formula

(F) ".ADAP.TPLUR" : OJB S V R8 LONG=6\*NADAPT

Vector of realities length 6 X NADAPT, where NADAPT is the number of causes of adaptation. It contains information on the computation of time step according to

For each cause of adaptation:

V (1) – Méthode de calcul of time step according to

=1 for "FIXE"  
=2 for "DELTA\_Grandeur"  
=3 for "ITER\_NEWTON"  
=4 for "FORMULA"  
=5 for "IMPLEX"

V (2) – Value of "PCENT\_AUGM" if method "FIXES"

V (3) – Value of "VALE\_REF" if method "DELTA\_Grandeur"

V (4) – Not used

V (5) – Value "NB\_ITER\_NEWTON\_REF"

V (6) – Not used

(F) ".ADAP.TPLUK" : OJB S V K16 LONG=4\*NADAPT

Vector of realities length 4 X NADAPT, where NADAPT is the number of causes of adaptation. It contains information on the computation of time step according to

For each cause of adaptation:

V (1) – Not used

V (3) – Value of key word "NOM\_CHAM"

V (3) – Value of key word "NOM\_CMP"

V (4) – Not used