

Selection of one or more fields in a Structure of Data RESULT

1 Goal

Description of the keywords of access to the fields of sizes of a structure of data of the type `result`.

To extract a field from sizes in a concept `result` one has two types of indicators: the reference symbols and variables of access.

This document describes the whole of the keywords giving access the fields of size contained in a structure of data `result` and used in the orders `CALC_CHAMP` [U4.81.04], `CALC_G` [U4.82.03], `COMB_SISM_MODAL` [U4.84.01], `EXTR_MODE` [U4.52.12], `IMPR_GENE` [U4.91.02], `IMPR_RESU` [U4.91.01], `LIRE_RESU` [U7.02.01], `POST_ELEM` [U4.81.22], `POST_RCCM` [U4.83.11], `POST_RELEVE_T` [U4.81.21], `RECU_FONCTION` [U4.32.03], `TEST_RESU` [U4.92.01].

2 Syntax

```

# Extraction of a field of size of resu

    ◇ /      TOUT_CHAM      = / 'YES' ,           [DEFECT]
      /      / 'NOT' ,
      /      NOM_CHAM      = L_NOMSYMB,           [1_K16]
    ◇ /      TOUT_ORDRE    = 'YES' ,           [DEFECT]
      / /      NUME_ORDRE  = LORDRE,             [1_I]
      / /      LIST_ORDRE  = LENTI,             [listis]
      /      TOUT_MODE    = 'YES' ,
      / /      NUME_MODE    = LMODE,             [1_I]
      / /      LIST_MODE    = LENTI,             [listis]
      /      NOEUD_CMP    = LNOECMP,           [1_K16]
      /      NOM_CAS      = NCAS,               [K16]
      /      ANGLE        = LANGL,             [1_R]
      / /      FREQ        = LFREQ,             [1_R]
      / /      LIST_FREQ    = LREEL,           [listr8]
      / /      TOUT_INST    = 'YES' ,
      /      INST          = LINST,             [1_R]
      /      LIST_INST     = LREEL,           [listr8]
    ◇ /      CRITERION = 'RELATIVE'
[DEFECT]
      ◇ PRECISION = / prec                       [R]
      /           / 1.0E-3 or 1.0D-6, *         [DEFECT]
      / CRITERION = 'ABSOLUTE'
      ◆ PRECISION = prec                       [R]

```

* This value by default depends on the structure of data of type result which is exploited.

- $PREC = 10^{-3}$ for the following orders: TEST_RESU, EXTR_MODE, COMB_SISM_MODAL,
- $PREC = 10^{-6}$ for the following orders: CALC_CHAMP, CALC_G, IMPR_GENE, IMPR_RESU, LIRE_RESU, POST_ELEM, POST_RCCM, POST_RELEVE_T, POST_RCCM.

The value by default of $1.0D-6$ for the relative precision was selected very small to avoid selecting very close values obtained for example during the automatic recutting of the step of time.
The keyword `PRECISION` becomes obligatory (not value by default) if `CRITERE=' ABSOLU'`.

3 Extraction of a field of size

3.1 Choice of the reference symbols: Operands TOUT_CHAM / NOM_CHAM

```
/ TOUT_CHAM = / 'YES' [DEFECT]
```

This keyword indicates that one wants to reach (X) the field (S) of sizes actually calculated (S) for the concept result RESU. If the operand is not used NOM_CHAM, this operand is taken by default with 'YES'.

The possible fields are described in specific documentations of the concepts result.

Example: the possible fields are for a result of the type evol_elas [U4.51.01]:

```
DEPL  
SIGM_ELNO  
EPSI_ELNO  
... ..
```

```
/ NOM_CHAM = L_NOMSYMB [1_K16]
```

A concept result can be composed of several fields of sizes of type field to the nodes or field by element. This keyword makes it possible to confer choose a list of reference symbols of field among the whole of possible (TOUT_CHAM).

Note:

|Keywords TOUT_CHAM and NOM_CHAM cannot be used simultaneously.

3.2 Choice of the sequence numbers: Operands TOUT_ORDRE/NUMÉRIQUE_ORDRE/LISTE_ORDRE

```
/ TOUT_ORDRE = 'YES' [DEFECT]
```

This keyword gives access (X) the field (S) for all the already calculated sequence numbers.

Example:

- every moment for a result of the type evol_...
- all clean modes for a result of the type mode_meca.

```
/ NUME_ORDRE : LORDRE [1_I]
```

This keyword makes it possible to reach only (X) the field (S) correspondent a list of sequence numbers LORDRE (plural is employed here for the case where one chose TOUT_CHAM = 'YES').

Example: RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'YES', NUME_ORDRE= (3.6))

One will reach all the computed fields with the third and the sixth sequence number.

```
/ LIST_ORDRE : LENTI [listis]
```

The keyword LIST_ORDRE indicate that one wants to reach (X) the field (S) correspondent with a list of sequence numbers LENTI, defined by the operator DEFI_LIST_ENTI [U4.34.02] (LENTI is thus a concept of the type listis).

Example:

```
LIST = DEFI_LIST_ENTI ( VALE = (3.6) )
```

```
RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'YES', LIST_ORDRE= LISTS)
```

One will reach all the computed fields with the third and the sixth sequence number.

3.3 Other ways of choosing the sequence numbers: variables of access

3.3.1 Operands TOUT_MODE/NUMÉRIQUE_MODE/LISTE_MODE/NOEUD_CMP

```
/ TOUT_MODE = 'YES'
```

This keyword indicates that one wants to reach all the fields for all the already calculated numbers of mode.

It is licit only for the types of concept `result` (mode statics or dynamic) having for variable of access `NUME_MODE`.

```
/ NUME_MODE = LMODE [1_I]
```

This keyword indicates that one wants to reach (X) the field (S) correspondent with a list of numbers of mode `LMODE`. These numbers are those affected by the calculation algorithm.

It is licit only for the types of concept `result` (mode statics or dynamic) having for variable of access `NUME_MODE`.

Example: `RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'OUI', NUME_MODE= (3.6))`

One will reach all the fields corresponding to the third and the sixth mode.

```
/ LIST_MODE = LENTI [listis]
```

The keyword `LIST_MODE` indicate that one wants to reach (X) the field (S) correspondent with a list of numbers of modes `LENTI`, defined by the operator `DEFI_LIST_ENTI` [U4.34.02] (`LENTI` is thus a concept of the type `listis`). It is valid only for the types of concept `result` having for variable of access `NUME_MODE`.

Example:

```
LIST = DEFI_LIST_ENTI ( VALE = (3.6))  
RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'YES', LIST_MODE= LISTS)
```

One will reach all the fields corresponding to the third and the sixth mode.

```
/ NOEUD_CMP = LNOECMP [1_K16]
```

Results of the type `base_modale` or `mode_stat` have as a variable of access `NOEUD_CMP`. The value of these variables of access is obtained by concaténant the name of the node and the name of the component. To specify a value of the variable of access, the user will give two names, the name of the followed node by the name of the component. A list of n variables of access will be introduced by the data of N couples (name of the node, name of the component).

A list of values of this variable of access can be provided by the list $(couple1, couple2, \dots)$.

3.3.2 Operand NOM_CAS

```
/ NOM_CAS = NCAS [K16]
```

The keyword `NOM_CAS` indicate that one wants to reach the field corresponding to a case of loading. It is licit only for the concepts `result` of type `mult_elas` who have as a variable of access `NOM_CAS` and produced by `MACRO_ELAS_MULT` [U4.51.02].

3.3.3 Operand ANGLE

```
/ ANGLE = LANGL [l_R]
```

The keyword `ANGLE` indicate that one wants to reach (X) the field (S) recombined (S) for a list of angles. It is licit only for the concepts `result` of type `comb_fourier` who have as a variable of access `ANGLE` and produced by the operator `COMB_FOURIER` [U4.83.31].

3.3.4 Operands `FREQ / LIST_FREQ`

These operands are licit only for the types of concept `result` having for variable of access `FREQ` (`mode_meca`, `dyna_harm`,...).

```
/ FREQ = LFREQ [l_R]
```

The keyword `FREQ` indicate that one wants to reach (X) the field (S) correspondent with a list of frequencies `LFREQ`.

Example: `RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'OUI', FREQ= (3.52, 7.37)))`

One will reach all the fields corresponding to the frequencies `3.52` and `7.37`.

```
/ LIST_FREQ = LREEL [listr8]
```

The keyword `LIST_FREQ` indicate that one wants to reach (X) the field (S) correspondent with a list of frequencies `LREEL`, defined by the operator `DEFI_LIST_REEL` (`LREEL` is thus a concept of the type `listr8`).

Example:

```
LIST = DEFI_LIST_REEL ( VALE = (3.52, 7.37))  
RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'YES', LIST_FREQ =  
LIST))
```

One will reach all the fields corresponding to the frequencies `3.52` and `7.37`.

3.3.5 Operands `TOUT_INST / INST / LIST_INST`

These operands are licit only for the types of concept `result` of temporal evolution having for variables of access `INST` (`evol_noli`, `evol_ther`, `dyna_trans`,...).

```
/ TOUT_INST = 'YES'
```

This keyword indicates that one wants to reach all the fields for every already calculated moment.

```
/ INST = LINST [l_R]
```

The keyword `INST` indicate that one wants to reach (X) the field (S) correspondent with a list of moments `LIST`.

Example: `RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'YES', INST= (3. , 7.)))`

One will reach all the fields corresponding to the moments `3.` and `7.`.

```
/ LIST_INST = LREEL [listr8]
```

The keyword `LIST_INST` indicate that one wants to reach (X) the field (S) correspondent with a list of moments `LREEL`, defined by the operator `DEFI_LIST_REEL` (`LREEL` is thus a concept of the type `listr8`).

Example:

```
LIST = DEFI_LIST_REEL ( VALE = (3. , 7.))  
RESU = (_F (RESULTAT= RESU, TOUT_CHAM = 'YES', LIST_INST= LISTS))
```

One will reach all the fields corresponding to the moments 3. and 7. .

3.3.6 Operands PRECISION / CRITERION

These operands make it possible to refine the access by real variables of access of time or the frequency.

```
PRECISION = / prec [R]
            / 1.0D-3 or 1.0D-6 [DEFECT]
```

This keyword makes it possible to indicate that one searches all the fields whose moment (respectively the frequency) is in the interval "inst ± prec"(confer CRITERION).

By default prec = 1.0D-3 or prec = 1.0D-6 (according to the orders).
If CRITERE=' ABSOLU', there is no value by default.

```
CRITERION = / 'RELATIVE' [DEFECT]
            / 'ABSOLUTE'
```

'RELATIVE' : the interval of research is: [inst (1 - prec), inst (1 + prec)]

'ABSOLUTE' : the interval of research is: [inst - prec, inst + prec].