Data format sd_matr_elem and sd_vect_elem

Summarized:

Contents

1 Data structures in some keys

a sd_matr_elem represent a set of elementary matrixes.
A sd_vect_elem represents a set of elementary vectors.

One can “assemble” sd_matr_elem to obtain one sd_matr_asse.
One can “assemble” sd_vect_elem to obtain a sd_cham_no.

Practically, the sd_matr_elem and the sd_vect_elem consist of a set of sd_resuelem [D4.06.05]. A sd_resuelem being all the matrixes (or vectors) elementary correspondings with the elements of a sd_ligrel.

A sd_matr_elem (or a sd_vect_elem) can not contain any sd_resuelem. That can happen if the sd_modele contains only static substructures.

2 Tree structure

```
sd_matr_elem (K19):: =record

  (O)   ".RERR":  OJB S  V K24 long=5
  (F)   ".RELR":  OJB S  V K24 long=*
  (F)   ".RECC":  OJB S  V K8  long=*


sd_vect_elem (K19):: =record

  (O)   ".RERR":  OJB S  V K24 long=5
  (F)   ".RELR":  OJB S  V K24 long=*
  (F)   ".RELC":  OJB XC V I   NO
```

3 Contained of the JEVEUX objects

3.1 Object ".RERR"

".RERR": S V K24 long=5

Is V = ".RERR"

V (1)	name of the subjacent sd_modele
V (2)	name of the attached on-option: "RIGI_MECA", "MASS_THER", "CHAR_MECA",…
V (3)	/"OUI_SOUS_STRUC"/"NON_SOUS_STRUC"
V (4)	Name of the sd_cham_mater subjacent with the sd_matr_elem (or sd_vect_elem).
V (5)	Name of the sd_cara_elem subjacent with the sd_matr_elem (or sd_vect_elem).

V (3) =/"OUI_SOUS_STRUC"/"NON_SOUS_STRUC" : Indicate if the elementary terms (matrixes or vectors) of static substructures are to be taken into account (or not).

For example, for a sd_matr_elem of the type "RIGI_MECA" which would relate to only blockings of ddls with dualisation, it is necessary to be unaware of substructures. If not, during the assembly, one would be likely to double the stiffness of substructures.

Note:
"OUI_SOUS_STRUC" does not want to say that the model has active substructures inevitably. But if it has some, they will be taken into account.

Object .RERR is obtained by calling the routine memare.f. Object

3.2 ".RELR" ".

RELR": S V K24 This

object contains the list of the sd _resuelem composing the sd _matr_elem (or the sd _vect_elem). This

object does not exist so the model contains only substructures (and not ordinary finite elements). That is to say

V = ".RELR", V (

I) (1:19): name of the ième sd _resuelem of the sd _matr_elem (or of the sd _vect_elem). Caution:

For
the sd _vect_elem, V (I) is the name of 1 sd _cham_no (and not 1 resuelem) When
this second member comes from a load of the type AFFE _CHAR_MECA/VECT_ASSE Note:

The number of sd _resuelem is obtained by " LONUTI" of object .RELR .
The utility reajre.f makes it possible to store the resuelem in the sd_matr _elem (or sd_vect _elem).
Object

3.3 ".RELC" ".RELC

": XC V I NO () This object

exists only if the mesh contains the superones. This collection is named by the loading cases indicated by the user in command CALC_ VECT_ELEM. All the objects of this collection have the same length. That is to say

nomcas such a loading case, V = "

.RELC" (nomcas). LENGTH
(V) = nbmas = many super-meshes of the subjacent mesh for

I = 1 , nbmas V (I)
: /1 if
super-mesh I am active for the loading nomcas /0
if super-mesh I am not active for the loading nomcas Object

3.4 ".RECC" ".RECC

```
": S V K8 This object
```

exists only if the sd_matr_elem were obtained by the command CALC_MATR_ELEM. One stores in this vector the name of the loads having been used for computation of the sd_matr_elem. This object is used during the assembly of the sd_matr_elem in order to find the possible eliminated linear relations "hidden" within the sd_charge. V = "

```
.RECC". LENGTH
    (V) = nbmas = many loads V (I)
    : name of the ième load Examples
```

4 sd_matr

4.1 _elem MATELE

```
_1=CALC_MATR_ELEM (MODELS   =MODELE_1, CHARGE     =CHARGE_1, CARA_
                           ELEM=CARAC_1, CHAM_
                           MATER=CH_MAT_1, OPTION=' RIGI_MECA') gives
:---------------------------------------------------------------------

PRINTING
 SEGMENT OF VALUES >MATELE_1 .RELR           < >>>        >>
 1 - >
      MATELE_1.ME001 <>MATELE          _1.ME002 < 3 -          >
      <
-------------------------------------------------------------------------------
PRINTING
 SEGMENT OF VALUES >MATELE_1 .RERR           < >>>        >>
 1 - >
      MODELE_1 <>RIGI                 _MECA < 3 -               >
      OUI_SOUS_STRUC <>CH_           MAT_1.MATE_CODE < 5 -      >
      CARAC_1 < sd_                  vect
```

4.2 _elem VECELE

```
_1=CALC_VECT_ELEM (CHARGE   =CHARGE_1, OPTION  = ' CHAR_MECA') gives

:---------------------------------------------------------------------

PRINTING
 SEGMENT OF VALUES >VECELE_1 .RELR           < >>>        >>
 1 - >
      VECELE_1.VE001 <>VECELE          _1.VE002 < 3 -          >
      <> <                        5 -                        >
      <> <                        7 -                        >
      <> <                        9 -                        >
      <> <
-------------------------------------------------------------------------------
PRINTING
 SEGMENT OF VALUES >VECELE_1 .RERR           < >>>        >>
 1 - >
      MODELE_1 <>CHAR                 _MECA < 3 -               >
      NON_SOUS_STRUC <> <          5 -                        >
```

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