Structure S of data sd_corresp_2_mailla and sd_L_corresp_2_mailla

Summarized:

Contents

1 General information

the sd_corresp_2_mailla are the data structure used for projection of the fields in command PROJ_CHAMP. It stores geometrical information making it possible to associate the geometrical entities of the 2 meshes to project one on the other. The SD is very different according to the method of projection selected.

For time this SD is used in command PROJ_CHAMP like in key word LIAISON_MAIL d'AFFE_CHAR_MECA.

The structure sd_l_corresp_2_mailla makes up of 2 sd_corresp_2_mailla . First is used for all the methods of PROJ_CHAMP except ECLA_PG , second is used for method ECLA_PG . This structure was created with an aim of projecting results having at the same time fields ELGA and not ELGA . One has thus both sd_corresp_2_mailla available according to the type of field to project. The structure sd_l_corresp_2_mailla is used only in PROJ_CHAMP .

1.1 For method "COLLOCATION"

Is 2 meshes M1 and m2 which occupy the same area of space. The sd_corresp_2_mailla corresponding to the couple (M1, m2) is the data structure which and the expresses the geometrical correspondence between the nodes of the mesh m2 meshes of the M1 mesh.

1.2 For methods "NUAGE_DEG_0/1"

Is 2 meshes M1 and m2 which occupy the same area of space. The sd_corresp_2_mailla corresponding to the couple (M1, m2) contains the lists of the nodes to be put in opposite.

2 Tree structure

```
sd_corresp_2_mailla (K16)     :: = record
```

is nno2 the number of nodes of the mesh m2

```
(O)    ".PJXX_K1"    :  OJBSVK24                dim=5
(O)    ". $VIDE"     :  /sd_corresp2_elem
                        /sd_corresp2_nuage
```

```
sd_corresp_2_elem (K16)       :: = record
```

is nno2 the number of nodes of the mesh m2

```
(O) ".PJEF_NB"   :  OJBSVIdim=nno2
    ".PJEF_M1"   :  OJBSVIdim=nno2
    ".PJEF_CF"   :  OJBSVRdim=3*nno2
    ".PJEF_CO"   :  OJBSVR
    ".PJEF_NU"   :  OJBSVI

(F) ".PJEF_TR"   :  OJBSVIdim=nno2
    ".PJEF_AM"   :  OJBSVIdim=nno                  2%

if METHODE=' ECLA_PG':
(F) ".PJEF_MP"   :  OJBSVK8dim=1
    ".PJEF_EL"   :  OJBSVI

% if METHODE='SOUS_POINT_MATER':
    ".PJEF_SP"   :  OJBSVI
```

```
sd_corresp_2_nuage (K16)      :: = record

   (O) ".PJNG_I1"   :   OJBSV            I
       ".PJNG_I2"   :   OJBSVI
```

2.1 Contained of JEVEUX objects

".PJXX_K1"

".PJXX_K1" (1) : name of mesh 1: M1
".PJXX_K1" (2) : name of mesh 2: M2
".PJXX_K1" (3) : method of projection:
"COLLOCATION"/"NUAGE_DEG_0"/"NUAGE_DEG_1"
".PJXX_K1" (4) : name of a cham_no "models" (if méthode=' NUAGE_DEG_0/1')
".PJXX_K1" (5) : unutilised

".PJEF_M1"

".PJEF_M1" (ino2): ima1: number of the mesh of m1 which must be used with the interpolation of the node ino2 as m2

".PJEF_NB"

".PJEF_NB" (ino2): many nodes of ima1

".PJEF_CO"

".PJEF_CO" (3* (ino2-1) +1): "ksi" of ino2 in ima1
".PJEF_CO" (3* (ino2-1) +2): "eta" of ino2 in ima1
".PJEF_CO" (3* (ino2-1) +3): "dzeta" of ino2 in ima1

Note:

pjef_co is useful only for connections 3d/coque and 3d/poutre meshes the SEG use only ksi, SORTED Them and QUADS use only ksi and eta

".PJEF_NU"

".PJEF_NU": contains the numbers of the nodes of m1 being used with the interpolation of the nodes as m2 (put end to end)

".PJEF_CF"

".PJEF_CF": contains the coefficients for the nodes of m1 being useful has the interpolation of the nodes of m2 (put end has end)

".PJEF_TR" and **".PJEF_AM"**

objects .PJEF_TR and PJEF_AM do not exist that in the made temporary corresp_2_mailla of TR3 (TR3 = SEG2, TRIA3 or TETRA4)

".PJEF_TR" (ino2): number of the TR3 associated with the node ino2

".PJEF_AM" (ino2):
1 - > the node ino2 is included in a mesh of m1 one can then use the routine reereg.f to improve the accuracy of the interpolation. 0
- > if not ".

PJEF_MP" and ". PJEF_EL"

objects .PJEF _MP and PJEF _EL exist only for METHODE = "ECLA_PG" ".

PJEF_MP": (1
): name of mesh 1 "precedes" ".

```
PJEF_EL":  length >= 2*nb_PG (models "2") For
  each Gauss point of the model "2", one stores: V (
  2* (ipg-1) +1) = ima2: number of the mesh container ipg V (
  2* (ipg-1) +2) = kpg:  number of the Gauss point in ima2 "
```

.PJEF _SP"

object .PJEF _SP exists only for METHODE = "SOUS_POINT_MATER". ".

```
PJEF_SP":  length = 3* nb_SP_MAT (models "2") For
  each subpoint and each point of the list of family MATER of the model
"2", one stores: V (
  3* (ispma-1) +1) = ima2: number of the mesh V (
  3* (ispma-1) +2) = kpg:  number of the Gauss point V (
  3* (ispma-1) +3) = the GPS : number of the subpoint ".
```

PJNG_I1" and". PJNG_I2" These

2 vectors of integers store the numbers of the nodes in correspondence via the key word factor VIS_A_VIS . That is to say

NOCC the number of occurrences of VIS_A_VIS : ".

```
PJNG_I1" (1): NOCC ".
PJNG_I1" (2): nb1: many nodes from MY 1 for occurrence 1 of VIS_A_VIS ".
PJNG_I1" (3): nb2: many nodes from MY 1 for occurrence 2 of VIS_A_VIS …
       ".
PJNG_I1" (1+NOCC): nbnocc ".
PJNG_I1" (1+NOCC+1,…, 1+NOCC+nb1): numbers of the nodes from MY 1 for
          occurrence 1 of VIS_A_VIS …
      Note:
```

If

key word VIS_A_VIS is not used: .PJNG _I 1(1) =0
object .PJNG _I2 has the same organization that .PJNG _I1, but it informs about the nodes of
the mesh MY 2. Example

2.2 of use (method "COLLOCATION ") One

wants to know how to interpolate INO 2 from the M1 mesh either

```
nbno1='.PJEF_NB' (INO2) or
decal= sum for ino<INO2 of ".PJEF_NB" (ino) value
(INO2) =0 C
i=1, nbno1 nuno
  1='.PJEF_NU' (decal+i) coefr
  = ' .PJEF_CF' (decal+i) value
  (INO2) =valor (INO2) +coefr*valor (nuno1) enddo
```